

Geberit ProPlanner 2013

User Manual



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Geberit ProPlanner 2013

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Locate the sales company in your country at www.geberit.com or via the online link on the start page of the software.

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1 Basic Information

Once you have opened ProPlanner for the first time, you can familiarise yourself with the basic features of the program and the user interface.

1.1 Registration and Licensing



If you have any questions or problems with licensing or registration, please contact the Geberit sales company in your country.

You will have already selected a country and are thus assigned to a sales company when you start ProPlanner for the first time.

Registration

When you register, you will have received a so-called corporate key and license data (PLD file), as corporate customers and not private individuals are registered with ProPlanner. Proceed as follows should other employees within your company wish to use ProPlanner:

1. Start up ProPlanner 2013.
2. Login as an existing customer and select one of the following options:
 - Import your company's license data.
 - Enter the registration data. Make sure that you enter upper and lower case character and spaces correctly.

3. Confirm with **Finish**.

Licensing

After registration, you can use some modules free of charge but will have to purchase license packages for other modules. You can use the licenses for one or more computers.

Purchasing a license package

1. Start up ProPlanner 2013.
2. In the menu bar click on the question mark **?** and select **License management**.

License package	Costs	Status	Training	License
Piping Systems				
Potable Water, Waste Water, Heating	Free	✓ Available		
Roof Drainage Systems				
Pluvia	per year	✗ Not licensed		Administrate
Detailed Planning 3D				
GIS, Duofix, Potable Water, Waste Water	per year	✗ Not licensed	Log on	Administrate
Waste Water Prefabrication	per year	✗ Not licensed	Log on	Administrate
Installation Systems				
GIS, Duofix	Free	✓ Available		
Schematic Planning				
Potable Water, Waste Water	per year	✗ Not licensed		Administrate

3. Select a license package and click in the relevant line on **Administrate**.
4. Enter your e-mail address and send the license order.
5. Call your sales company should you not have access to the internet.

Activating a company license

Should your company have already purchased license packages, you can activate them as follows:

1. Save the license file to your computer.
2. Start up ProPlanner 2013.
3. In the menu bar click on the question mark **?** and select **License management**.
4. Click on **Import license data** and select the directory in which the license file is saved.

Using company licenses as multi-computer licenses

You can use every ProPlanner license on several computers.

Requirements:

One license is already activated.

1. Start up ProPlanner 2013.
2. In the menu bar click on the question mark **?** and select **License management**.
3. Click on **Export license data** and save the license file, for example on a USB memory stick.
4. Save and activate the license data on other computers.



Geberit ProPlanner can be started several times so that several Windows user accounts can simultaneously access an installation, which, for instance lies on a server.

Updating ProPlanner

An update is performed in the background of ProPlanner as soon as the ProPlanner program starts. The ProPlanner updater signals as soon as a new program version is available. The new program version is automatically downloaded and installed, depending on the setting.



You require administration rights for an internet update.



1. Double-click in the task bar on **ProPlanner Updater**, to call up the ProPlanner Updater.
2. Click on **Download**, to download and install a new program version.
3. Click on **Search for updates**, to search for new program versions.
4. Enter the **Language** and the **Market**.
5. In the **Action when a new update is found** field, select whether a message is displayed or whether the download of the program version should start automatically.



- The downloaded data is saved in the **Downloads** folder on your computer.
- You can also call up the ProPlanner Updater via the ? Call up > **ProPlanner update**.

1.2 Help on Help

Characters, symbols, and highlighted objects simplify reading and navigation within the Help function.

Characters and symbols

The following characters and symbols are used in this Help function:

Symbol	Designation	Meaning
	Tip	Tips for an easier or better method of operation.
	Note	Basic information about how to proceed
	Important note	Urgent information which should always be observed. Non-adherence can result in loss of data or extensive planning problems.
▶ 1. 2.	Action	Handling instructions which consist of just one step. Handling instructions which consist of several steps are numbered.
→	Result	Result of an instruction for action

Highlighted passages

Keyboard shortcuts appear in the text as follows: **Ctrl + C**.

Software dialog elements are shown as follows: **Tab** or **Window** or **Menu entry**.

Software buttons are shown as follows: **OK**.

Screen tip

ProPlanner generates a message if application limits are exceeded or the minimum criteria are not fulfilled. The relevant object is displayed with a red or yellow frame or the relevant pipe has a coloured background. An information note appears as soon as your cursor hovers over the object or pipe. This message text is called a screen tip.

1.3 ProPlanner Start Page

After starting Geberit ProPlanner, the following program window appears:

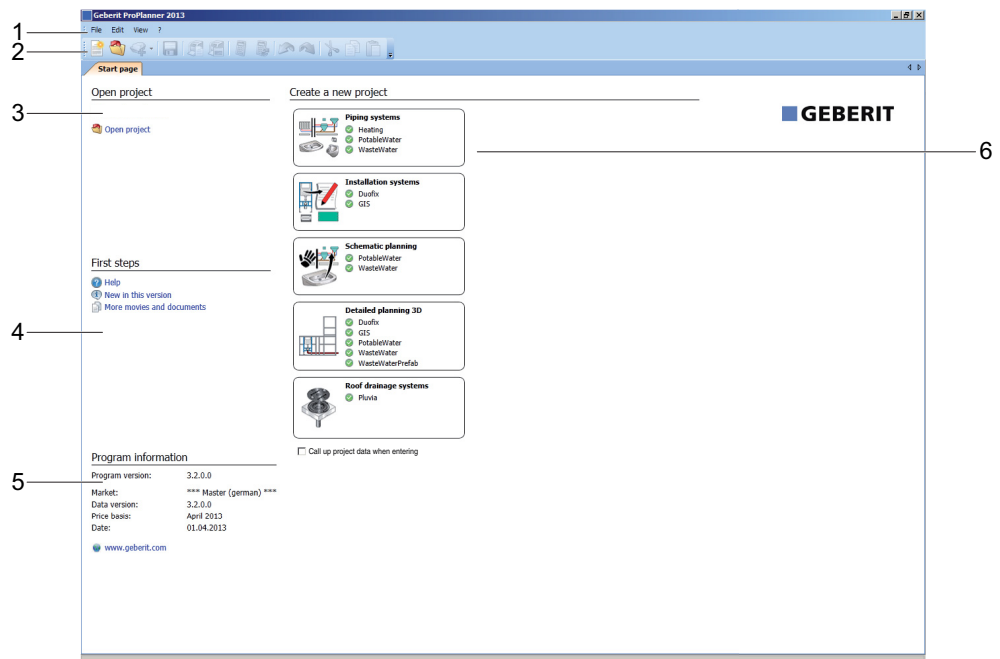


Fig. 1-1 User interface start page

- (1) Menu bar (see page 9)
- (2) General toolbar (see page 10)
- (3) Opening a project (see page 8)
- (4) **First steps** (see page 8)
- (5) Program information (see page 9)
- (6) Create new project (see page 9)

Opening a project

Existing projects can be opened. Projects are displayed as soon as projects have been saved in the current version of ProPlanner.

"First steps" window

Find help and information on innovations in the current version of ProPlanner here. There is also a link with which you can call up other documents and films.

Program information

Here you will find:

- Information on the program version
- Information on your selected market
- Information on the data version
- Version of price lists used
- Link to Geberit online

Create new project

You can select a subproject and start ProPlanner in the **Create new project** area.

1.3.1 Menu Bar

You can call up all the commands you require to work in ProPlanner using the menu bar.

Menu	Commands
File	<ul style="list-style-type: none"> • Create new project • Add subproject • Open, close and save project • Import subprojects • Export graphics or lists (see page 161) • Print graphics and lists (see page 155) • Add predefined or user-defined articles (see page 159) • Program settings (see page 11)
Edit	<ul style="list-style-type: none"> • Calculate an entire project or subproject • Copy, cut or paste objects from the Design Area window • Undo or redo actions
View	<ul style="list-style-type: none"> • Show and hide windows • Zoom • Select layout of user interface
?	<ul style="list-style-type: none"> • Call up the Help function • Call up data sheets • Remote maintenance (see page 9) • License management (see page 5) • Update ProPlanner • Information on Geberit ProPlanner

Remote maintenance

If problems occur with the application or installation of ProPlanner that cannot be resolved via Help or the Support line, a Geberit employee can carry out remote maintenance with TeamViewer. The employee then has direct access to your PC. For further information on TeamViewer visit:

<http://www.teamviewer.com/>

Information on Geberit ProPlanner

















This window provides information about the program version currently installed, the price basis, the market set and the path to the ProPlanner log files. Windows Explorer automatically opens with the corresponding folder by clicking on the link to the Log directory.




1.3.2 General Toolbar

You can call up all the basic functions of ProPlanner using the general toolbar.



Non-active buttons appear in light grey.

Button	Command
	Create new project
	Open existing project
	Add subproject
	Save a project
	Print lists
	Print graphics
	Calculate subproject
	Calculate entire project
	Cut object and store in clipboard
	Copy object to clipboard
	Paste object from clipboard
	Undo last action
	Redo undone actions
	Zoom to 100 %
	Increase size of drawing
	Decrease size of drawing

Button	Command
	Fit drawing to window size
	Adjust drawing frame to drawing
	Adapt toolbar

1.4 General Program Settings

The **Program settings** menu contains the following sub-menus.

- Market and language selection
- User-defined articles
- Autosave ([see page 11](#))

Use the **User-defined articles** function to compile lists of articles and save them in xml format. You can then add the material entered to a subproject and print lists ([see page 159](#)).

Market and language selection

The choice of the market can be made irrespective of the selected language. The market influences the available modules and installations, as well as the prices, Value Added Tax rate and product range. The market also defines the calculation rules for a project. A separate market setting can be made for each project.

The language selection determines the language of the user interface.

1. Click on **Program settings** in the **File** menu and select **Market and language selection**.
2. Select **Market** and **Language** in the corresponding fields.
3. Confirm your entries with **OK**.



ProPlanner must be restarted if you change the language. The program does not have to be restarted after altering the market.

Autosave

If you enable the **Autosave** function, the project will be saved at regular intervals. and you can also specify the interval (in minutes).

1. Click on **Program Settings** in the **File** menu and select **Autosave**.
2. Select **Autosave**.
3. Specify the interval (in **minutes**) at which the data is saved.
4. If you wish to confirm each save process, check **Obtain confirmation before each autosave**.
5. Click on **OK** to save the settings.

1.5 Carrying Over Old Data

You can carry over projects from previous versions of ProPlanner. The project is then recalculated with the settings of the new version.

Opening a project from a previous ProPlanner version

1. Click on **Open** in the **File** menu.
2. Click on the project in the **Open project** window and click on **Open**.
3. To recalculate the project, click on **OK** in the **Project update** window.
 - A note appears in the message list if articles are used in the old file, which are no longer in the product range.

Fault clearance

ProPlanner always shows an error list in the message list following a calculation. Double-clicking on the error message enlarges the error in the Design Area window and highlights it in red. A screen tip on the object explains the error and provides information on the old and missing material. Errors can be corrected in the message list in the **Command** field or using the screen tip in the Design Area window. In this way, old material can be replaced by articles from the new product range.

1.6 Projects and Subprojects

A project can contain several subprojects. You can select the subproject you require at the start of a project or add it to the project later and edit it. You can view the subprojects of a project in the Project window.

1.6.1 Projects

You can create new projects or open existing projects on the Start page of ProPlanner. The recently saved projects are displayed in the **Open project**.

The project name will be marked with a star in the Design Area window if you have created a new project or if you have not saved a project after changing it. When you save the project, the star will disappear.

Creating a project

As soon as you create a project, you can choose whether you wish to enter project data with an assistant at the start of a project or whether you wish to enter the program directly and enter the project data at a later stage.

1. If you wish to enter ProPlanner directly, uncheck **Call up project data when entering**.
2. Click on a subproject in the **Create new project** area.
 - ProPlanner starts with the selected subproject.
3. To enter project data when starting the program, check the **Call up project data when entering** checkbox and click on a subproject in the **Create new project**.
4. Enter the project data (see page 13) in the **New project** assistant.



If you have selected a Detailed Planning 3D or Schematic Planning subproject, you can also define the building properties.

5. Click on **Finish**, to save your entries.

Opening a project

- ▶ Select one of the following options to open an existing project:
 - Click on a project name.
 - Click on **Open project**, select the project and click on **Open**.

Saving the project

1. In the **File** menu, click on **Save**, to save a project that has already been entered.
2. If you have created a new project, click on **Save as** and give the project a file name.
3. Click on **Save**.

1.6.2 Project Data and Subproject Data

In ProPlanner you can enter two different types of data within a project:

- Project data
- Subproject data

If you wish to create a new project with subprojects, you can enter information about the project, for example the **project number** and the **project name**. You can integrate details of the plumbing engineer, include your company logo and document the progress of the project. Enter the **Hourly rate** and **VAT** to create a quotation. The data is carried over into all subprojects and is displayed in the title block of your drawing area and in all lists.

You can change the data for your project and subproject in the **Assistants and settings** window. When you change the data for a project, the changed data affects all subprojects. To prevent this, disable the transfer of **project data** to a subproject.

Entering project data

1. In the **Assistants and settings** window, click on **Project data**.
2. Complete the fields under **Project information** and **Plumber/Sanitary engineer**.
3. Click on **Change company logo** in the **Plumber/Sanitary engineer** section, to include your company logo.



- Use company logos with a low resolution. High-resolution company logos can result in the program being very slow.
- The company logo is saved in the ProPlanner file.

4. Click on **Next** and document the **Change history** of the project with **Creation date** and **Date changed**.
5. Click on **Next** to specify the **Hourly rate** and the **Value Added Tax** for **Quotations**.
6. Check **Save as default** to apply the settings as default settings for other projects.
7. Click on **Finish** to apply the data.

Enter subproject data

1. In the **Assistants and settings** window, click on **Subproject data**.
2. Uncheck the checkbox **Inherit project data**, to prevent the transfer of **project data** to your subproject.
3. Enter your changes and confirm with **Next** or **Finish**.

1.6.3 Subprojects

You can create and edit various subprojects within a project. If you have, for instance, created a project with a Piping Systems subproject, you can add other subprojects to the project (e. g. Roof Drainage System and Detailed Planning 3D) and edit them.

Creating subprojects



1. Click on **Add subproject** in the **File** menu.
2. Select a subproject.

Moving subprojects



1. In the Project window, click on **Move subproject down**, to move the subproject one position down.



2. In the Project window, click on **Move subproject up**, to move the subproject one position upward.

Renaming subprojects

1. Right-click on a subproject in the Project window and select **Rename subproject** in the pop-up menu.
2. Enter a designation and confirm with **Enter**.

Copying subprojects

You can plan a subproject several times. The quantities of material required are adjusted in the material list to match the number of subprojects.

1. Double-click on a subproject in the **Quantity** field in the Project window.
2. Enter the required number of subprojects and confirm with **Enter**.

Copying subprojects

1. Right-click on a subproject in the Project window and select **Copy** in the pop-up menu.
2. Right-click at any point in the Project window and select **Paste** in the pop-up menu.

Deleting subprojects

1. Right-click on a subproject in the Project window and select **Delete subproject** in the pop-up menu.
2. Confirm with **Yes**.

1.7 Window Layout

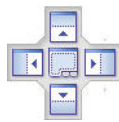
In the subprojects, it is possible to freely arrange the windows and save them as an individual layout. Two standard layouts are additionally provided. The pre-set layout applies to the current subproject.

Using a standard layout

- To select a standard layout, click on **Layout** in the **View** menu and select **Standard layout 1** or **Standard layout 2**.



Adapting and saving a layout

1. Click on **Layout** in the **View** menu and ensure that **Fix layout** is not checked.
2. Click on the title bar of a window, press the mouse button and move the window.
 - Four arrows appear in the middle and an outward facing arrow appears at each edge of the screen:



3. If you hold down your mouse key and hover over the middle of one of the arrows, the window containing the four arrows appears at the edge of the window.
4. As soon as you hold down your mouse key and hover over one of the arrows at the edge of the screen, the window appears at the respective edge of the screen.
5. If you wish to save the layout, click on **Layout** in the **View** menu and select **Save layout**.
6. Select a layout and enter a name. Confirm with **OK**.

Showing and hiding a window

1. Click on  in the title bar of a window.
 - The window is hidden, but remains visible at the edge as a tab.
2. If you wish to show the window temporarily, hover over the respective tab.
3. If you wish to show the window permanently, click on  in the title bar of the window.

Fixing the layout

It is possible to fix a layout if you wish to protect a defined layout from being changed.

- Click on **Layout** in the **View** menu and select **Fix layout**.

The lock must be disabled to perform any changes you require.

Adapting the Object window

The presentation of the object symbols can be adapted in the Object window.



1. Right-click on the Object window.
2. Choose between **Large symbols**, **List**, **Small symbols** and **Tree**.

1.8 Calculation

Always initiate a calculation of your project or subproject as soon as you have made changes to your plan. If you have, for example, changed the material or other properties of objects or pipes, the results are only visible following a recalculation of your project.

Calculation

You can select whether you wish to calculate a subproject or the entire project. Use the following buttons and shortcuts to carry out a calculation quickly.

Button	Keyboard shortcut	Command
	F5	The current subproject is recalculated.
	Ctrl + F5	The entire project is recalculated.

After a calculation, ProPlanner shows the dimensions of the pipes. The dimensions of the pipes in the examples is based on the German calculation standard and may deviate in other market settings.

An error or warning message automatically appears in the message list if a limit value is exceeded in your plan. The message provides information on how to solve the problem. The incorrect object is highlighted in the Design Area window by clicking on an error message.

2 Roof Drainage System

It is possible to plan a roof drainage system that extracts rainwater by negative pressure with the Roof Drainage System module. In contrast to conventional roof drainage systems, the dimensions of the pipes and outlets ensure that rainwater is drained via fully filled pipes. Filling the pipe system creates negative pressure, allowing pipes to be laid without a gradient.

Pipes

In the Roof Drainage System module it is possible to plan Geberit pipes with various fastening systems, including fire protection sleeves and acoustic insulation. In the calculation, ProPlanner takes into account reinforced pipes where the pressure is too high.

By means of a displayed hydraulics list you can adapt the pipe lengths and dimensions resulting in a hydraulic compensation.

Calculation

The calculations in the Roof Drainage System module are done in line with currently applicable standards and guidelines (DIN 1986-100 (2008-05) for German and Dutch markets, otherwise Geberit calculation method PSI).

Lists

After the planning process and a successful calculation, it is possible to print quotation and calculation lists as well as material lists. The hydraulic list, in which all the hydraulic parameters in your pipe network are listed, is also important.

Drawing

A drawing in the Roof Drainage System module is displayed isometrically, with pipes divided into sections and partial sections. All pipes and outlets that end in a single underground pipe connection form a section. You can plan as many sections as required. The isometric drawing can be exported to a CAD program and further processed there ([see page 162](#)).

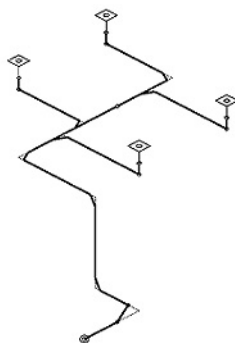


Fig. 2-1 Drawing with a section

The drawn roof drainage system on the building could appear as follows:

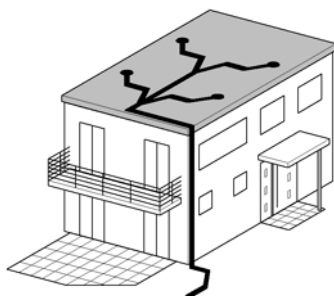


Fig. 2-2 Roof drainage system on the building

2.1 User Interface

The following window appears once you have created a new project (**File > Create new project**) for Roof Drainage System:

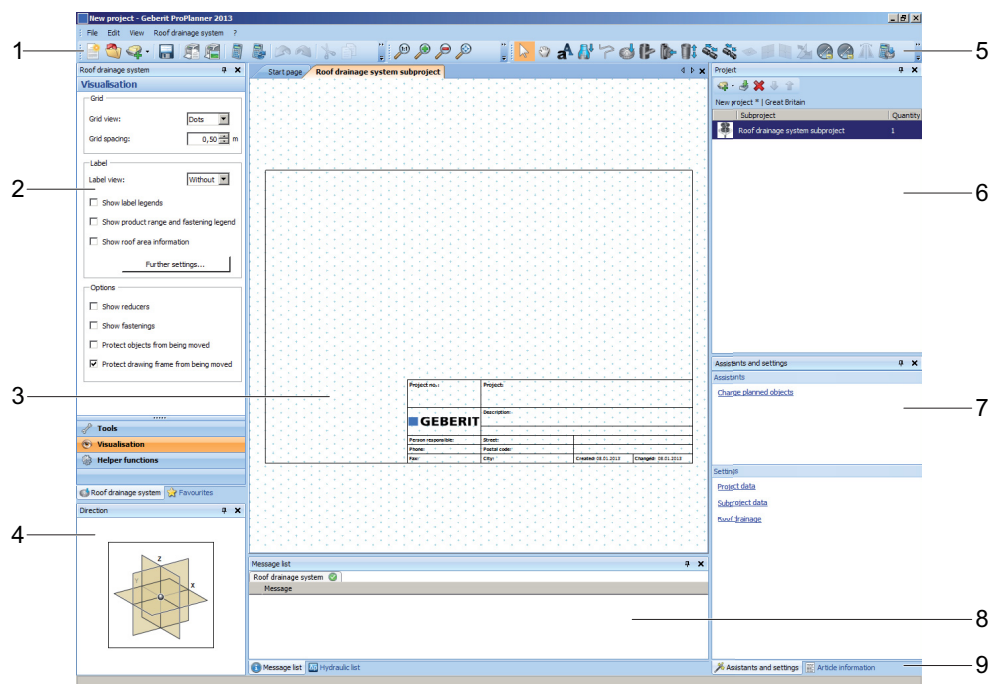


Fig. 2-3 Roof Drainage System user interface

- (1) General toolbar ([see page 10](#))
- (2) Roof Drainage System window and Favorites ([see page 20](#))
- (3) Design Area window for drawing ([see page 20](#))
- (4) Direction window ([see page 20](#))
- (5) Roof Drainage System toolbar ([see page 19](#))
- (6) Project window ([see page 20](#))
- (7) Assistants and settings window ([see page 21](#))
- (8) Message list / Hydraulic list ([see page 21](#))
- (9) Article information window ([see page 21](#))

Roof Drainage System toolbar

These instructions describe procedures using menu commands. The following commands can be alternatively called up using the toolbar:

Button	Command
	Select objects
	Move drawing area
	Insert texts
	Set underground pipe connections
	Draw pipe
	Set roof outlet
	Insert branch fitting
	Insert access pipe
	Insert expansion socket
	Split pipe
	Join pipes
	Draw pipe in XY layer
	Draw pipe in XZ layer
	Draw pipe in YZ layer
	Change display ratio (1:2 ratio)
	Lock all pipe dimensions
	Release all pipe dimensions
	Mirror objects
	Start roof outlet calculator
	Optimising Dimensioning

Roof Drainage System window and Favorites









You can choose between the Roof Drainage System and Favorites windows.

The following tabs are available in the **Roof Drainage System** window:

- **Tools**
- **Display**
- **Helper functions**

These tabs can be used to call up the key functions or define the appearance of your drawing, for instance labels or grid visualisation in the Design Area window. You can for instance **fix pipe dimensions** and **calculate the system** in **Helper functions**.

The following commands are available in the **Helper functions** tab:

Button	Command
	Delete unconnected objects
	Lock all pipe dimensions
	Release all pipe dimensions
	Mirror objects
	Roof outlet calculator
	Import Roof Areas
	Calculate system
	Optimised calculation of system

The Favorites window contains all objects, assemblies and texts that have been saved as Favorites. Predefined favorites can be selected, depending on the market, to plan projects quickly and simply. Predefined favourites are shown in italics and cannot be deleted.

Design Area window



You can create an isometric drawing in the Design Area window.




Direction window

You can see in the Direction window in which layer a pipe lies.

Project window

The Project window displays the project currently open with its subprojects. The following buttons are available for adaptation:

Button	Command
	New subproject
	Import subproject

Button	Command
	Delete subproject
	Move subproject down
	Move subproject up

Projects and subprojects marked with an asterisk have not yet been saved.

Assistants and settings window

You can perform the following functions in the **Assistants and settings** window:

- Change planned objects ([see page 23](#))
- Enter project data ([see page 13](#))
- Enter subproject data ([see page 14](#))
- Define subproject settings for Roof Drainage System ([see page 22](#))

Message list

Depending on the calculation, the Message list displays a report that contains calculation errors, warning notes and information. Messages can be filtered according to **Type** in the right mouse key pop-up menu. The **Information** type messages are issued by default.

The following types are available in the pop-up menu:

Type	Explanation
Error	Only errors are displayed
Warning	Errors and warnings are displayed
Information	Errors, warnings and information are displayed (default setting)

Hydraulic List

All sections of the planned drainage system are listed in the hydraulic list. The properties of each section, such as length and diameter as well as volumetric flow rate, pressure and flow velocity, are displayed as the result of the calculation in table view. The content of the Hydraulic list changes according to the market set (calculations based on DIN 1986-100 (2008-05) or PSI).

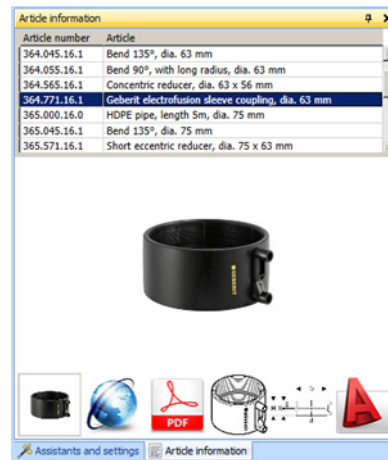
Article information window

As soon as a subproject has been calculated, you can call up views, dimensions and installation manuals for articles from the Geberit product range in the **Article information** window. You need an active Internet connection to do so.

You can obtain the following information:

- Photo and drawing of a selected article
- Drawing with dimensions
- Installation manual in PDF format
- ZIP file with CAD drawing in DWG or DXF format

- Link to the Geberit Product Catalogue



Article information also appears as soon as you add an article (see page 159) to your subproject and as soon as you call up Object properties (see page 49).

2.2 Assistants and Settings

You have the following setting options in the **Assistants and settings** window:

- Project data: (see page 13) General data on the project can be entered
- Subproject data: (see page 14) General data on the subproject can be entered
- Change planned objects: (see page 23) Settings for existing roof outlets and underground pipe connections can be changed
- Roof Drainage System: Subproject settings can be entered for the following areas:
 - Product range and fastenings (see page 22)
 - Display and label (see page 23)
 - Drawing area (see page 23)

2.2.1 Roof Drainage System Subproject Settings

If you define subproject settings for Roof Drainage System prior to starting drawing, all the objects are drawn with the corresponding settings. You can also make or change the settings once you have finished the drawing, but individually assigned settings are overwritten.

Settings for **Underground pipe connections** and **Roof outlets** are not overwritten. You can also change the settings subsequently using the assistant **Change planned objects** (see page 23) or using the respective object's pop-up menu. (see page 49).

Changing settings

1. In the **Assistants and settings** window click on **Roof Drainage System**.
2. Enter all the settings for the **General**, **Roof outlets**, **Underground pipe connections**, **Fittings**, **Fastenings** and **Connections** areas.
3. Click on **Finish** to save your settings for the current subproject.

2.2.2 Display and Label

The display and label settings can be adjusted as follows:

- Using the **Roof Drainage System subproject settings** in the **Assistants and settings** window.
 - Using the window **Roof Drainage System** (see page 25)
1. In the **Assistants and settings** window click on **Roof Drainage System**.
 2. Adjust the **Grid/display** for the drawing area.
 3. Specify the **Label** for the objects.
 4. Adjust the **Colours** of the drawing objects.
 5. Click on **Finish**, to save your settings.

2.2.3 Drawing Area

You can change the dimensions and alignment of the drawing area. The paper format set corresponds to the drawing frame in the Design Area window.

1. Select one of the following options to open settings for the drawing area:
 - Double-click on the title block in the Design Area window.
 - In the **Assistants and settings** window, click on **Roof Drainage System** and select **Drawing area**.
2. Specify the **Paper format**, **Alignment** and **Page margin**.
3. Adjust the **Scale** of the drawing area.
4. Click on **Finish** to apply the settings.



You can zoom into the drawing area by rotating the mouse wheel. Hold down the mouse wheel to move the drawing area.

2.2.4 Changing Planned Objects

Changes to roof outlets and/or underground pipe connections that have already been planned, can be made with the **Change planned objects** subproject assistant. Using this assistant affects **all** planned roof outlets and underground pipe connections. Subsequent changes to subproject settings do not affect planned roof outlets and underground pipe connections.

1. Click in the **Assistants and settings** window on **Change planned objects**.
2. Uncheck the checkbox to enter the settings.
3. Define the settings you wish for the **Roof outlets** and **Underground pipe connections**.
4. Click on **Finish** to save the settings.

2.3 Visualisation

You can define in **Visualisation** in the **Roof Drainage System** window whether you wish to use a grid for your drawing and how it should appear. You can also add labels and label legends to your drawing and enter other optional settings.

Setting the grid

Before you start drawing using Roof Drainage System, define the size of the grid and determine what should be displayed in the drawing.

A point or isometric grid (grid lines) can be displayed as a drawing aid. You can estimate the length of a pipe while drawing by means of the grid spacing set. If you draw a pipe or place an element, its capture point is always placed at a point on the grid.

1. Click on **Display** in the **Roof Drainage System** window.
2. Select the **Grid view** (points or grid lines) and the **Grid spacing** (distance between two grid points) in metres.



Subsequent modification of the grid width does not change the pipes previously drawn.

Displaying labels and label legends

You can display the labels of underground pipe connections, roof outlets and pipes, as well as explanations in label legends. If you have checked Label display, the pipe length is shown immediately when you draw pipes.

1. Click on **Display** in the **Roof Drainage System** window.
2. Select a **Label visualisation** (list or cross).
3. Check the box for the legends you wish to use.

Checkbox	Explanation
Display label legends	The meaning of the labels is explained.
Product range and fastening legend	The colour-coordinated visualisation of the different product range and fastening types is explained.
Display roof area information	The size of the roof area [m²], the rainfall DE [l/s/ha] / CH [l/s/m²] and the capacity factor are displayed.



Reinforced pipes, which have been excluded, have a label entry and an entry in the product range and fastening legend. The visualisation (line thickness) in the drawing area is adapted.

Adapting labels

1. Click on **Display** in the **Roof Drainage System** window.
2. In the **Label** area, click on **Other settings**.
→ The **Roof Drainage System Subproject settings** window appears.
3. Adjust the **Font types** and font sizes for the object labels and legends.
4. Specify the **Content of the object label** for the individual objects.
5. Click on **Finish** to apply the settings.



to differentiate better between roof outlets in the drawing, select the **Object type** and **Article number** to inscribe the roof outlets. The inscriptions are set as standard in the German market.

Moving labels

You can move individual or multiple labels.

1. Highlight one or more labels.
2. Use your mouse to drag the labels to the position you require.

Displaying reducers

You can display changes in the dimensions.

1. Click on **Display** in the **Roof Drainage System** window.
2. Select the **Display reducers** field in the **Options** area.
→ Triangles are placed at the pipe transitions at which pipes with different dimensions are connected. The point of the triangle points towards the smaller dimension.



Display fastenings

You can make the type of fastening of a pipe visible.

Requirements:

The fastening type has been defined ([see page 52](#)).

1. Click on **Display** in the **Roof Drainage System** window.
2. Select the **Display fastenings** field in the **Options** area.
→ The fastening type can be recognised by the colour of the pipe.

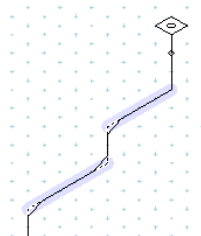


Fig. 2-4 Visualisation of a fastening type

Fixing objects

You can fix objects so that the objects cannot be moved. Only texts and labels can be moved if this option has been selected. This fixing is useful if the Design Area window is very full and you wish to avoid objects being moved accidentally.

1. Click on **Display** in the **Roof Drainage System** window.
2. Select **Protect objects from being moved** in the **Options** area.

Move drawing frame

You can move the drawing frame. The drawing frame is protected before moving by default.

1. Click on **Display** in the **Roof Drainage System** window.
2. Deselect **Protect drawing frame from being moved** in the **Options** area.
3. Click on the drawing frame in the Drawing Area window.
→ The drawing frame appears blue.
4. Press and hold down the left mouse key to move the drawing frame.
5. Press **Esc** to exit moving mode.

2.4 Roof Outlet Calculator

Use the roof outlet calculator to calculate the number of roof outlets depending on the roof area and the discharge rate required. You can define the roof area and the required capacity for the rainfall, the calculator automatically calculates the number of roof outlets. The volumetric flow rate is adapted if you change the quantity of roof outlets. As soon as the discharge rate needed corresponds to the planned discharge rate, then you can carry over the roof outlets into your drawing. If the values vary, you will receive an error message and it will be impossible to carry over the roof outlets into your drawing.

Calculating the quantity of roof outlets

















1. In the **Roof Drainage System** menu, click on **Roof outlet calculator**.
2. Specify the properties of the roof outlet in the **Add roof outlets** area. The configured minimum and maximum volumetric flow rate can be carried over for the calculation.
3. Enter the size of the **Roof area** in square metres.
4. Enter the average **Rainfall**.
5. Enter the **Capacity factor**.
→ The quantity of **Roof outlets**, the target volumetric flow rate (l/s) per roof outlet and the total **Discharge rate** required for all roof outlets are adjusted automatically.
6. Click on **Add**.
→ The number of roof outlets required with the target volumetric flow rate is displayed.
Both fields have a grey background if the required and planned discharge capacity agree. If the two values deviate from each other, the **Planned** field is highlighted in red.
7. Click on **Apply**.
→ The **Roof outlet calculator** tab appears in the **Roof Drainage System** window. The number of roof outlets needed is displayed.
8. Click on a roof outlet and place the outlet from the **Roof outlet calculator** into your drawing.
→ The roof outlet calculator is hidden as soon as you have placed all the roof outlets.

2.5 Importing Roof Areas

You can import roof areas from CAD drawings (DXF/DWG) in the Roof Drainage System module. You can set roof outlets and calculate pipes. You can then save and export the roof areas you have edited in this way.

The following buttons are available for importing roof areas:

Button	Command
	Import CAD file
	Export CAD file
	Load roof area file
	Zoom in. Drawing area is enlarged
	Zoom out. Drawing area is reduced
	Zoom to limits. Drawing area is adjusted to the size of the display window
	Zoom on area. A selected area is enlarged
	Black/white background
	Select objects
	Move drawing
	Set drawing scale
	Enter roof area
	Deduct roof area
	Set end point
	Draw piping lines
	Calculate pipes
	Draw auxiliary line
	Draw parallel auxiliary lines
	Select all layers of CAD drawing
	Deselect all layers

Button	Command
	Sort layers by name
	Sort layers by quantity
	Arrows to navigate between Layers , Roof areas and Roof outlets tabs

2.5.1 Importing Roof Areas

First import an AutoCAD file (DXF/DW) and define the drawing scale. Then the roof area can be highlighted in the imported drawing.

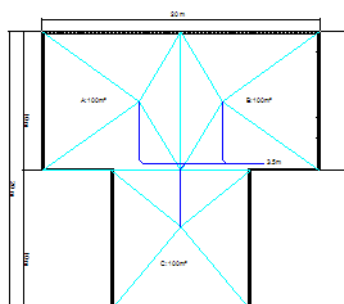
Importing CAD files



1. Click on **Import roof area** in the **Roof Drainage System** menu.
→ The **Import roof area** window appears.



2. Click on **Import CAD file** and select a file.
3. Confirm with **Open**.
→ The selected drawing is imported.

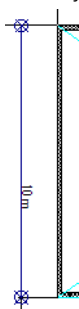


You can enlarge or reduce the drawing within the drawing area using your mouse wheel. Hold down the mouse wheel to move the drawing.

Fixing the drawing scale



1. Click on **Set drawing scale** in the **Import roof area** window.
2. Click in the drawing area and highlight the start point and end point of a section, the length of which you know.

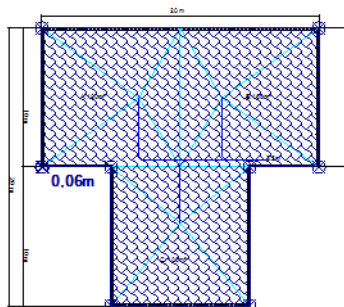


3. Enter the actual length of the section measured in the **Determine the length of the dimension** window.
4. Confirm with **OK**.

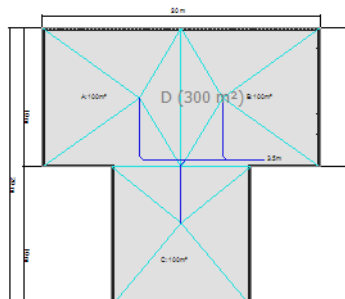
Entering roof areas



1. Click on **Enter roof area** in the **Import roof area** window.
2. Click on a point in the roof area in the drawing area.
3. Drag your mouse to the next point on the roof area and click in the drawing area.
4. Drag and click with your mouse until the entire roof area is covered with blue hatching.



5. When entering the roof area, simultaneously press the **Shift** key to draw the angles in 45° increments.
6. Press **Esc**.
7. Enter the **Height** of the roof area in the **Enter roof area** window. The field is checked. You can enter the value directly.
8. Specify the properties for the display of the entered roof area and confirm with **OK**.
→ The roof area is displayed accordingly in the drawing area.



9. Click on the **Roof areas** tab to remove an entered roof area.

Deducting roof area

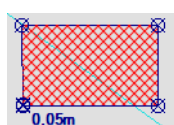
You can deduct roof areas in the drawing that do not have to be drained.

Requirements:

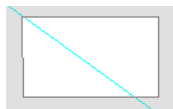
A roof area has been entered.



1. Click on **Deduct roof area** in the **Import roof area** window.
2. Click in the drawing area on an entered roof area and define the area that you wish to omit from the drainage system (see page 29).
→ The area is highlighted in red.



3. Confirm the query with **Yes**.
 - The omitted area is displayed without hatching and colour.



2.5.2 Placing Roof Outlets

First calculate the quantity of roof outlets. Then you can set the roof outlets with the help of auxiliary lines.

Calculating the quantity

Requirements:

A roof area has been imported and entered ([see page 28](#)).

1. Click on the **Roof outlet calculator** tab in the **Import roof area** window.
2. Select the entered roof area for which you wish to calculate the number of roof outlets.
3. Enter any other settings ([see page 26](#)).
4. Click on **Add**.
 - The calculated roof outlets are displayed on the **Roof outlets** tab.



- The volumetric flow rate is adjusted if you change the quantity of roof outlets.
- The required and planned discharge rate must agree before you can carry over the roof outlets to your drawing.

Drawing auxiliary lines

You have the option of drawing auxiliary lines to simplify the alignment of roof outlets. You can draw every auxiliary line individually or automatically insert parallel auxiliary lines with a fixed distance. You must have previously performed a distance measurement ([see page 28](#)) if you wish to generate parallel auxiliary lines.

Requirements:

A roof area has been imported.



1. In the **Import roof area** window, click on **Draw auxiliary line** and drag an auxiliary line across the drawing area.
2. Specify the line colour in the **Generate auxiliary line** window and confirm with **OK**.
3. Click again on **Draw auxiliary line** if you wish to generate other auxiliary lines manually.



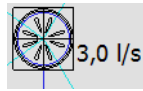
4. Click on **Draw parallel auxiliary lines** if you wish to generate parallel auxiliary lines automatically with a fixed distance.
5. Click on an auxiliary line already drawn in the drawing area.
6. In the **Draw parallel auxiliary lines** window, define the **Line colour**, the **Distance** between the lines and the **Number** of lines. **Distance** has been checked. You can enter the value directly.
7. Confirm with **OK** and click on the drawing area.
 - The lines are entered into the drawing.

Setting Roof Outlets

Requirements:

- A roof area is imported and entered ([see page 28](#)).
- The quantity of roof outlets is calculated for the entered roof area ([see page 30](#)).

1. In the **Roof outlets** tab, click on the roof outlet that you wish to set in the drawing.
2. Click in the **Drawing area** on the roof area for which the roof outlet has been calculated. If no roof outlets have been calculated for the selected roof area, then no roof outlets can be placed.
3. Enter the settings for the roof outlet in the **Set roof outlet** window and confirm with **OK**.
 - The roof outlet is set. The discharge rate appears beside the roof outlet.



4. Repeat steps 1 - 3 for all the entered roof areas.
5. Click on **Apply**, to carry over the set roof outlets into the isometry.
 - The roof outlets are displayed in the drawing at the respective distance.

2.5.3 Calculating Pipes

You can calculate the lengths of pipes with the help of piping lines. The pipes have to be connected with a roof outlet or an end point to be able to calculate pipes. The pipes can be carried over to the isometry following the calculation.

Setting end points

You can calculate the length of a pipe not connected to a roof outlet, such as a stack, using an end point.



1. Click on **Set end point** in the **Import roof area** window.
2. Click on the end of the pipe that is not connected to a roof outlet in the drawing area.
 - The **Set end point** window appears.
3. Select a **Line colour**.
4. Check **Add stack** to add a stack.
5. Enter the **Length of stack**.
6. Tick the checkbox to add an underground pipe connection and an access pipe.
7. Select the **Installation height of the access pipe**. The height is measured above the underground pipe connection.
8. Confirm with **OK**.
 - The end point appears in the drawing, the length of the stack is displayed.



9. Press **Esc** to exit the function.

Drawing piping lines

You have to draw pipe lengths to be able to calculate pipes.

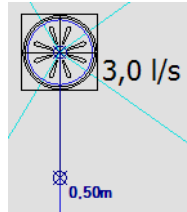
Requirements:

All roof outlets and end points are set ([see page 30](#)).



1. Click on **Draw piping lines** in the **Import roof area** window.

- Click on the centre point of a roof outlet and drag the piping lines in the required direction. You can draw the piping lines with a 45° angle. A capture point helps you to place the piping lines correctly on the roof outlet.

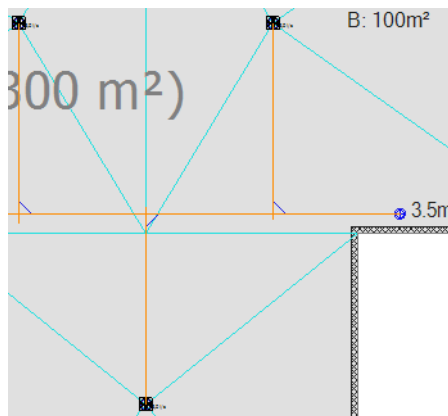


Capture points are enabled on all line end points, line intersection points and centres of circles.

- Click in the drawing area to set the piping line.



- Repeat steps 2 and 3 until all roof outlets and end points have been connected with piping lines.



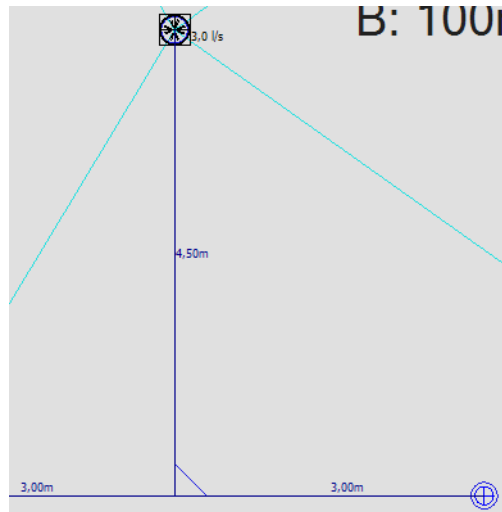
- Press **Esc** to exit the function.

Calculating pipes

The pipes can be calculated as soon as all piping lines have been drawn.



- ▶ Click on **Calculate pipes** and confirm the request.
- The auxiliary lines disappear and the pipe lengths appear.

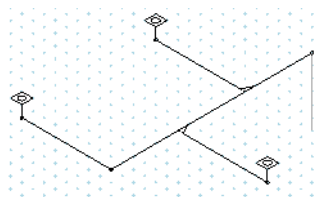


The roof area import objects (e.g. roof outlets and piping lines) can be highlighted and deleted, like all objects in the Roof Drainage System module ([see page 35](#)).

2.5.4 Carrying Over Your Drawing into Isometry

Once the pipes have been calculated ([see page 31](#)), you can carry over the drawing into the isometry.

- ▶ In the **Import roof area** window, click on **Apply**, to carry over your drawing into isometry.
- Roof outlets and pipes are displayed at the calculated spacing.



An underground pipe connection ([see page 41](#)) needs to be set for the drawing to be calculated correctly.

2.5.5 Saving and Loading Roof Areas

Imported and edited roof areas can be saved and loaded.

Saving roof areas

1. Click on **Apply** in the **Import roof area** window.
→ The roof area file (.gpr) is saved in your project folder.
2. If you have not yet saved a new project, select a location and a file name for your ProPlanner file.
3. Click on **Save**.
→ The ProPlanner file and the roof area file are saved at the same location.

Loading roof areas

You can use saved roof areas in all Roof Drainage System subprojects.



1. Click on **Load roof area file** in the **Import roof area** window.
2. Open your project folder and select a roof area file (.gpr).
3. Click on **Open**.

2.5.6 Exporting Roof Areas

Edited roof areas can be exported as an AutoCAD file (DXF/DWG).



1. Click on **Import roof area** in the **Roof Drainage System** menu.
→ The **Import roof area** window appears.



2. Click on **Load roof area file**, to call up a saved roof area.



3. Click on **Export CAD file** in the **Import roof area** window.
4. Select a folder and enter a file name.
5. Select a CAD format (DXF/DWG) under **File type**.
6. Click on **Save**.



Transparent areas are only exported and visualised transparently from AutoCAD version 2011 onwards.

2.6 Placing and Adapting Objects

You can place objects, such as underground pipe connections and roof outlets into the Design Area window, connect them to pipe and specify the properties of the objects. You can save favorites to quickly replicate individual building situations in different subprojects.

2.6.1 Selecting and Placing Objects

You have a number of options for selecting objects for your drawing in the Roof Drainage System module. You can find a list of all of the objects here ([see page 19](#)).

Selecting objects

- ▶ You have the following options for selecting an object:
 - In the **Roof Drainage System** menu, click on one of the objects that you need for your drawing.
 - Select one of the objects you need using the task bar.
 - In the **Roof Drainage System** window, click on **Tools**.

Placing objects

Once you have selected an object, place it as following in your drawing area:

1. Click on the object you require in the **Roof Drainage System** menu
 - ➔ The appearance of the cursor will change depending on the object you have selected
2. Click in the drawing area to place the object.



Please note that you can only place pipe-specific objects, such as expansion sockets or branch fittings, on pipes that have already been drawn.

2.6.2 Highlighting Objects

First highlight objects if you wish to move or delete them:

Highlighting individual objects

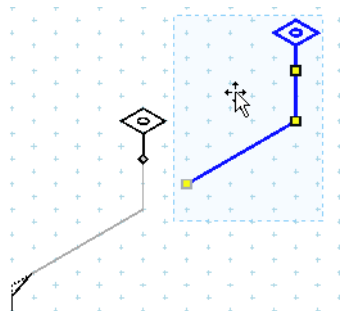
1. Click on the object to highlight it.
 - ➔ The object is highlighted in blue. The cursor will change.



2. To cancel the highlighting of an object, click on a free area in the drawing area.

Highlight several objects

1. Select one of the following options to highlight several objects:
 - Click on the drawing area and, holding the mouse key down, drag a frame around the objects that you wish to highlight.
 - Press **Ctrl** and click in turn on the objects that you wish to highlight.
 - Simultaneously press **Ctrl + A** to highlight all the objects.
 ➔ Highlighted objects appear in blue. The appearance of the cursor changes within a highlighted area:



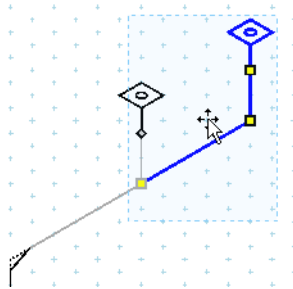
2. To cancel the highlighting of an object, click on a free area in the drawing area.

2.6.3 Moving, Deleting, Copying and Mirroring Objects

Pipes, outlets, underground pipe connections and pasted texts can be moved, deleted, copied or mirrored in the drawing.

Moving objects

1. Highlight the objects.
2. Hold down your mouse key and drag the objects to the desired position.



Deleting objects

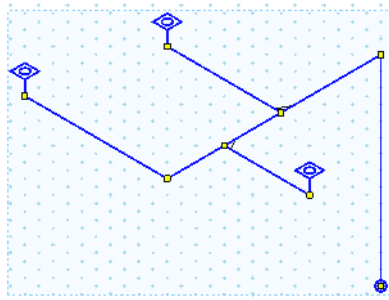
1. Highlight one or more objects.
2. Press **Del**.

Copying objects

1. Highlight the objects.
2. Click on **Copy** in the **Edit** menu.
3. Click on the drawing area.
4. Click on **Paste** in the **Edit** menu.

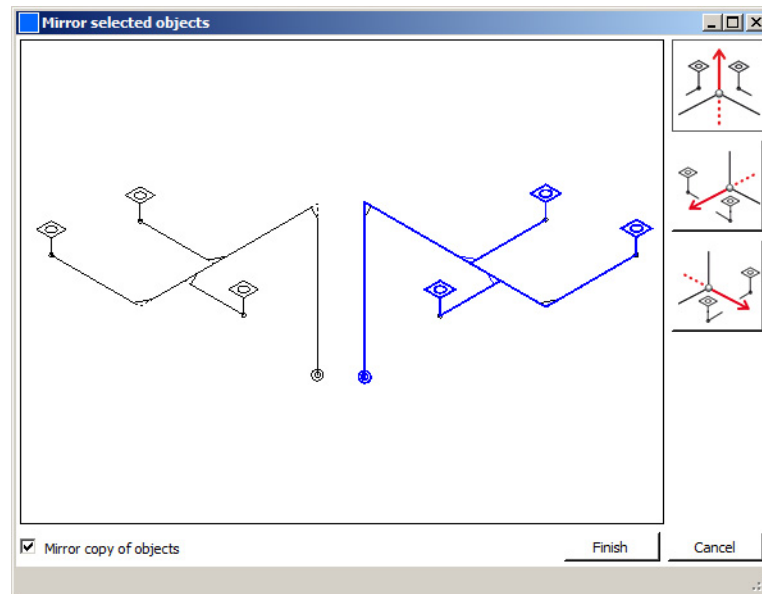
Mirror objects

1. Highlight the objects.





2. Click on **Mirror objects** in the **Roof Drainage System** menu.
→ The **Mirror Selected Objects** window appears.



3. If you wish to create a mirrored copy and retain the original, click on **Mirror copy of objects**.
4. Click on **Finish**.
→ The objects will be mirrored and can be placed at any position you wish.

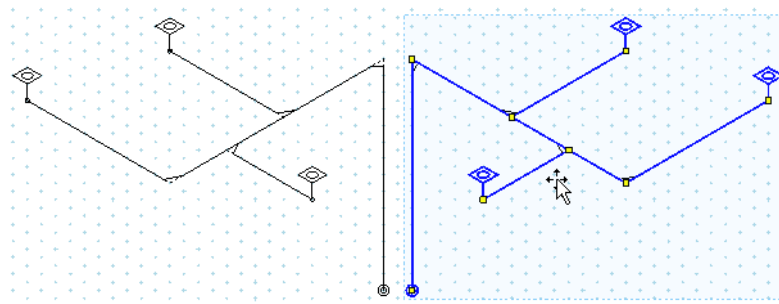
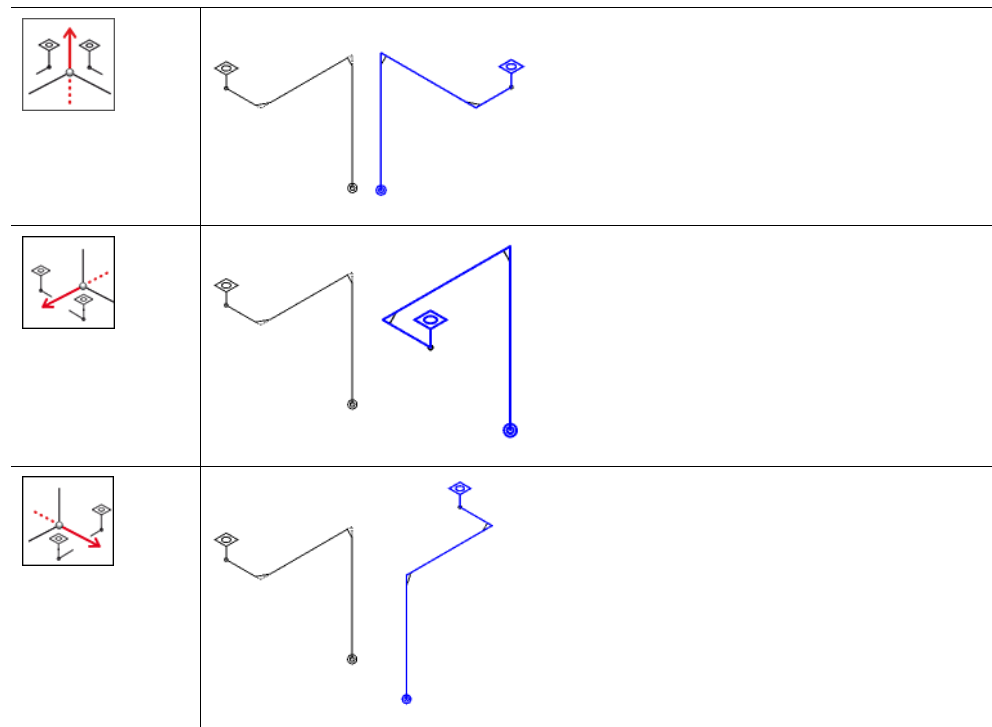


Fig. 2-5 Object mirrored with copy

You can use the buttons to select the axis around which the objects are to be mirrored:



Note that complex plans (for instance plans with layers ([see page 43](#))) cannot be mirrored around each axis. This is displayed by an information window.

2.6.4 Favorites

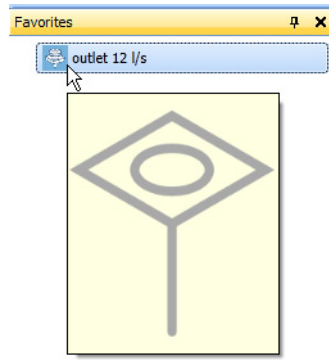
You can add objects, assemblies and texts to Favorites and call them up quickly via the Favorites window. You can use Favorites like objects and place them in the Design Area window ([see page 34](#)).

Adding an object to favorites



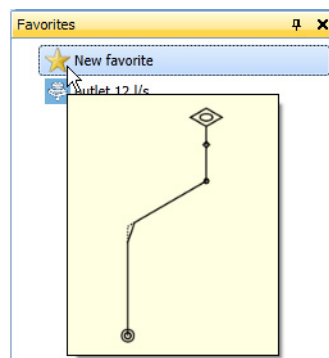
1. Right-click on an object in the Design Area window and select **Add to favorites** in the pop-up menu.
2. Open the Favorites window.
 - The object appears with the symbol and object type designation.

3. Move the mouse onto the object in the Favorites window.
→ The object appears in a quick view.



Adding an assembly to favorites

1. Highlight several objects and pipes that you wish to combine as an assembly in the Design Area window.
2. Right-click on the highlighted objects and select **Add to favorites** in the pop-up menu.
3. Open the Favorites window.
→ The assembly appears with a star symbol and the designation **New favorite**.
4. Move the mouse onto the assembly in the Favorites window.
→ The assembly appears in a quick view.



Favorites are available across all subprojects within a market. If you create Favorites in a Roof Drainage System subproject, you can also use these Favorites in other Roof Drainage System subprojects.

Creating a Favorites folder

You can file your favorites in folders to make the Favorites list clearer.

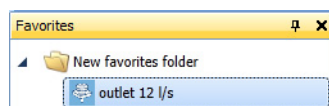




1. Right-click in the Favorites window and select **New favorites folder** in the pop-up menu.
→ The Favorites folder appears in the Favorites window.

2. Highlight the Favorites folder.



3. Right-click on an object or assembly in the Design Area window and select **Add to favorites** in the pop-up menu.
→ The object or assembly appears in the Favorites folder.



4. Highlight the Favorites folder.
-  5. Right-click on the Favorites folder and select **Collapse** to close the folder.
-  6. Right-click on the Favorites folder and select **Expand** to open the folder.



You can also use the arrow key  to minimise and maximise the Favorites folder.

Renaming favorites

You can rename assemblies, objects and the Favorites folder.



1. Highlight an assembly, an object or a Favorites folder in the Favorites window.
2. Right-click on the favorite and select **Rename** in the pop-up menu.
3. Enter a name for the Favourite.
4. Press **Enter** to confirm the name.

Exporting favorites

You can export favorites to exchange favorites between different ProPlanner installations. You can then file the favorites at a central place and access them from different locations.



Favorites can only be exported between subprojects of the same type within one market, from one ProPlanner installation and imported into another ProPlanner installation.



1. Highlight an assembly, an object or a Favorites folder in the Favorites window.
2. Right-click on the favorite and select **Export** in the pop-up menu.
3. Enter a file name and select a storage location in the **Save As** window.
4. Click on **Save** and confirm the information window with **OK**.
→ A Favorites file with the file extension .gpf is saved.

Importing favorites

You can read exported favorites into every Roof Drainage System subproject within a market.



1. Right-click in the Favorites window and select **Import** in the pop-up menu.
2. Open the folder in which the Favorites file is saved.
3. Highlight the file and click on **Open** to import the favorites into your subproject.
4. Confirm the information window with **OK**.
→ Favorites appear in a new Favorites folder in the Favorites window.

Deleting a favourite

You can delete assemblies, objects and the Favorites folder.



1. Highlight an assembly, an object or a Favorites folder in the Favorites window.
2. Right-click on a favorite and select **Delete** in the pop-up menu.



Default favorites are available depending on the market (sales company).

2.6.5 Setting Underground Pipe Connections and Roof Outlets

You can set roof outlets and underground pipe connections freely. We recommend, however, that you place objects as they are planned in a real situation. If you want to drain a rectangular roof area using four roof outlets, for example, it makes sense to arrange the outlets in a rectangular shape.

In order to perform a calculation, the following objects have to be available and be connected to each other:

- Roof outlet (depending on the market set, either with vertical and/or horizontal outlet)
- Collector pipe
- Underground pipe connection with a stack

The sequence is essentially immaterial when inserting objects. ProPlanner, however, simplifies insertion due to the differing displays of the cursor:

- Set the underground pipe connection
- Draw pipes ([see page 42](#))
- Set roof outlet

Setting the underground pipe connection



1. Click on **Set underground pipe connection** in the **Roof Drainage System** menu.
2. In the drawing area, click on the position at which you wish to set the underground pipe connection.
 - The set underground pipe connection appears in the drawing area and the cursor automatically changes to **Draw pipe** mode.



3. Draw the pipes ([see page 42](#)).
4. Press **Esc** twice, to exit **Draw pipe** mode.

Setting roof outlets



1. Click on **Set roof outlet** in the **Roof Drainage System** menu.
2. In the drawing area, click on the positions at which you wish to set roof outlets.
 - If the roof outlet can be connected to an existing pipe, a yellow box appears at the cursor.



3. Press **Esc**, to exit **Set roof outlet** mode.



Fig. 2-6 Roof outlet with vertical outlet



A Pluvia type roof drainage system requires a starting flow (pulling effect). What is important is to provide an adequate geodetic height between the roof outlet and the underground pipe connection.

2.6.6 Horizontal Roof Outlets

You have the option of placing roof outlets with vertical **and** horizontal outlets depending on the market set in ProPlanner. Enter your settings for the type of roof outlets as follows:

- For all roof outlets in the total subproject not yet set in Roof Drainage System subproject settings ([see page 22](#))
- For all roof outlets already planned in the Change planned objects ([see page 23](#)) assistant
- For individual roof outlets in the **Object properties**

Setting horizontal roof outlets

Requirements:

A roof outlet has been set and connected to an underground pipe connection ([see page 41](#)).

1. Right-click on a roof outlet and select **Object properties** in the pop-up menu.
2. In the **Configuration** field, select **Object**.
3. Enter the settings for a horizontal outlet.
4. Calculate the subproject to update your plan.

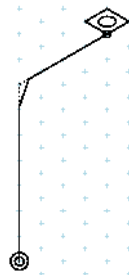


Fig. 2-7 Roof outlet with horizontal outlet

2.7 Pipes

Pipes are not shown true to scale. Draw the pipes by eye so that they relate realistically to each other.

There are four types of pipe. The type of pipe (outlet pipe, stack, collector pipe, etc.) is assigned automatically during the drawing procedure. In most countries, you will have to assign a transition section later ([see page 49](#)).

Drawing pipes

1. Click on **Draw pipe** in the **Roof Drainage System** menu.
→ The cursor changes to **Draw pipe** mode.
2. Click on the underground pipe connection in the drawing area and then on the position where the pipe should end.
3. Press **Esc** twice, to exit **Draw pipe** mode.

You can recognize the connection status by the colour of the pipe:

- Pipes which are not fully connected are grey
- Pipes which are fully connected are black

After the drawing procedure, bends are inserted automatically at the transitions. A 90° bend is indicated in the drawing via a circle and two 45° bends (branch fittings) are indicated via a dotted line.

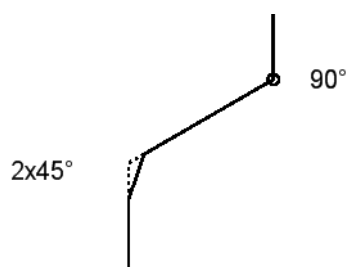


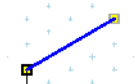
Fig. 2-8 Visualisation of bends in the drawing

Changing the pipe length

If a pipe seems too long or too short, you can shorten or extend the pipe after drawing it:



1. Click on the pipe.
→ The pipe appears blue and the end points are highlighted.




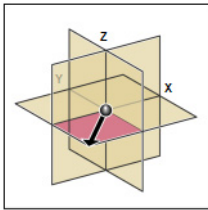
2. Click on an end point and, keeping the mouse button pressed, drag the pipe to the desired length.


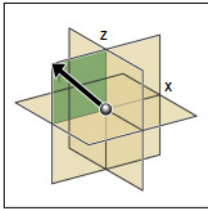

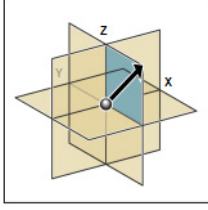
2.7.1 Pipe Direction

You can draw pipes at certain angles. The display thus becomes clearer with complex drawings.

To draw pipes at 45° angles, you need to select an appropriate layer when drawing. The layer of a highlighted pipe appears in the Direction window so that it is possible to see at any time in which layer a pipe is located.

The following layers can be selected:

Button	Layer	Direction
	XY layer: You can only draw in the direction of the x or y axis. The drawing area is shown in red.	

Button	Layer	Direction
	XZ layer: You can only draw in the direction of the x or z axis. The drawing area is shown in green.	
	YZ layer: You can only draw in the direction of the y or z axis. The drawing area is shown in blue.	



You can draw in different layers directly after each other in the isometry. Incorrect plans appear in the message list following the calculation.

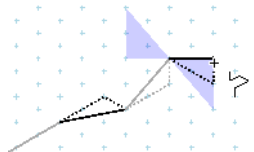


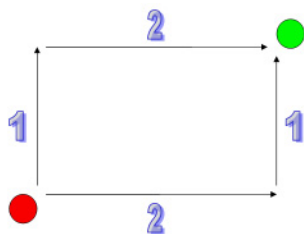
Fig. 2-9 Drawing in three layers

Defining pipe direction

Requirements:

Draw pipe (see page 42) mode is enabled.

- Click on the button for the required layer. The buttons are only active when it is possible to draw in the layer.
→ The drawing area appears in the corresponding colour.
- To change the visualisation of the length ratio (1:2 or 2:1), click on **1:2 ratio** in the toolbar. This setting has no influence on the actual lengths or on the hydraulics.
→ By changing the ratio the pipe connection between two points is displayed differently:



Adjusting optimum drawing size

If you exceed the drawing frame when drawing, you can ideally adapt the frame around your drawing so that all objects are fully within the frame.



- Click on **Fit to drawing frame** in the toolbar to adapt the size of the drawing area.



- Click on **Limits**, to adapt the drawing area to the side of the Design Area window.

2.7.2 Splitting and Connecting Pipes

Drawn pipes can be split at any position or two pipes can be connected to form one.

Splitting pipes

Pipes can be split to enable a dimension change within a pipe. A better hydraulic balance can be achieved by splitting the pipes into several sections. Bends cannot be split.



1. Click on **Split pipe** in the **Roof Drainage System** menu.
2. In the drawing area, click on the position where you wish to split the pipe.



3. Press **Esc**, to exit **Split pipe** mode.
4. Adjust the length and diameter properties of the pipe sections using the right mouse key pop-up menu or in the hydraulic list at [\(see page 49\)](#).



5. Calculate the subproject.

Connecting pipes

Requirements:

The ends of the pipes which you wish to connect have to be aligned to each other.



1. Click on **Join pipes** in the **Roof Drainage System** menu.
2. Click in turn on the pipes that you wish to connect in the drawing area.



3. Press **Esc**, to exit **Join pipes** mode.

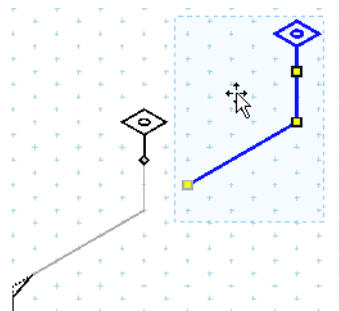


4. Calculate the subproject.

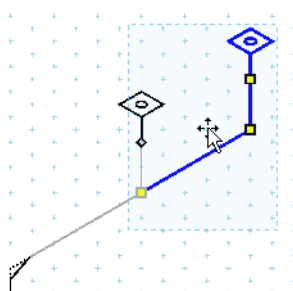
Connecting a pipe to a branch fitting

Pipes can be connected directly to branch fittings and bends to avoid generating a new plan.

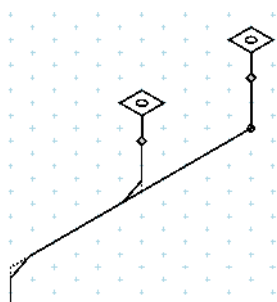
1. Highlight the objects you wish to connect.



2. Move the objects towards the branch fitting.



→ The objects are connected automatically.



2.7.3 Inserting Branch Fittings

Should you wish to connect an existing pipe to a new pipe, you must place a branch fitting. You need to select a layer to add a branch fitting with a bend or a branch fitting with a pipe and bend. You can recognise the branch fittings from the intensity of colour of the triangles displayed.



1. In the **Roof Drainage System** menu, click on **Insert branch fitting**.

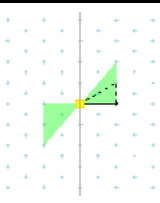
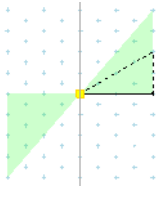
→ The cursor assumes the shape of a branch fitting.

2. Move the cursor to the position on the pipe at which you wish to insert the branch fitting.

→ You can set the branch fitting as soon as a yellow square appears.



3. In the **Roof Drainage System** menu, under **Branch pipe**, click on a drawing layer to determine the connection of the branch fitting.

Layer	Description
	Dark green triangle: Branch fitting with directly connected bend
	Light green triangle: Branch fitting with directly connected pipe and bend



The connections of the branch fitting are displayed in all layers with the respective colour in green, red and blue.

4. Click on the end of the pipe.
→ The branch fitting with a bend or the branch fitting with a pipe and a bend has been inserted.
5. Press **Esc** to exit the procedure.

Generating branch fittings automatically

You can connect two pipes with a branch fitting without calling up the **Insert branch fitting** function.

Requirements:

Two non-parallel pipes are available.

1. Highlight one of the two pipes.
2. Move the pipe until an end point touches the other pipe.
→ The two pipes are connected to each other via a branch fitting.



The direction of flow can be seen with 45° branch fittings. If you open older files, all of the branch fittings planned against the direction of flow are highlighted red. An error message will correspondingly be shown in the Message list.

2.7.4 Inserting Access Pipes and Expansion Sockets

You can insert access pipes and additional expansion sockets into pipes.

Insert access pipe



1. Click on **Access pipe** in the **Roof Drainage System** menu.
→ The cursor assumes the shape of an access pipe.



2. Click on the position on the pipe at which you wish to insert the access pipe.
→ You can set the access pipe as soon as a yellow square appears.
3. Press **Esc** to exit the procedure.

Insert expansion socket



1. Click on **Insert expansion socket** in the **Roof Drainage System** menu.
→ The cursor assumes the shape of an expansion socket:



2. Click on the position on the pipe at which you wish to insert the expansion socket.
→ You can set the expansion socket as soon as a yellow square appears.
3. Press **Esc** to exit the procedure.



















2.8 Symbols in the Drawing


Drawings are displayed isometrically in the Roof Drainage System module. Pipes are divided into stacks and sections. All pipes and roof outlets that end in an underground pipe connection form a stack. You can adjust the pipe length for every section (S). The isometric drawing is not true to scale.

Read here how to create a drawing:

- Set underground pipe connections and roof outlets ([see page 41](#))
- Draw pipes ([see page 42](#))

The individual drawing tools that you can use to create an isometric drawing are listed in the following table. You can also see the various cursors assigned to the isometric symbols.

Symbol	Cursor	Explanation
		Set underground pipe connection
		Draw pipe
		Roof outlet with vertical outlet
		Roof outlet with horizontal outlet
		Insert branch fitting
		Insert access pipe
		Insert expansion socket
		Split pipe
		Join pipes
		Pipe bend 2 x 45° Is automatically inserted when drawing
		Pipe bend 90°. Is automatically inserted when drawing

Symbol	Cursor	Explanation
		Display reducers. With pipe transitions, where pipes of different dimensions are connected. The points of the triangle point in the direction of the smaller dimension (see page 25).

2.9 Displaying and Changing Properties

You can change the properties of objects (roof outlets, pipes and underground pipe connections) in various ways:

- Using Roof Drainage System subproject settings ([see page 22](#))
- Using the Change planned objects ([see page 23](#)) wizard
- Using the **Object properties** window
- Using the Hydraulic list ([see page 53](#))

Define the properties of the objects for the total subproject in **Roof Drainage System subproject settings**. The settings apply to every object that you use in your drawing. You can only change the properties of all roof outlets and underground pipe connections that you have already set in the **Change planned objects** wizard. Change the properties of individual objects in the **Object properties** window. You can only edit the target volumetric flow rate of roof outlets, the dimensions of objects and the length of pipes in the hydraulic list. A changed length for pipes is not shown in the drawing.



If you have changed object properties, you must then recalculate the plan ([see page 53](#)) to make the effects on the dimensions visible.

Changing properties of individual objects

Change the properties of individual objects in the **Object properties** window. You can make general and article-specific settings. If you wish to enter product range-specific settings for an underground pipe connection or a roof outlet, select **Object** in the **Configuration** field.

1. Right-click on an object and select **Properties** in the pop-up menu.
2. Enter the required settings and confirm with **OK**.
→ The changed object appears green in the drawing.



3. Calculate the subproject to update your plan.

Changing properties of several objects

You can change the properties of several objects at the same time.

1. Highlight several objects, the properties of which you wish to change.
2. Right-click on the highlighted objects and select **Properties** in the pop-up menu.
3. In the **Object class** field, select an object, the settings of which you wish to adjust.
4. Confirm the changed settings with **OK**.
→ The changed objects appear green in the drawing. All existing and new objects retain their current settings.



5. Calculate the subproject to update your plan.

Changing properties for roof outlets

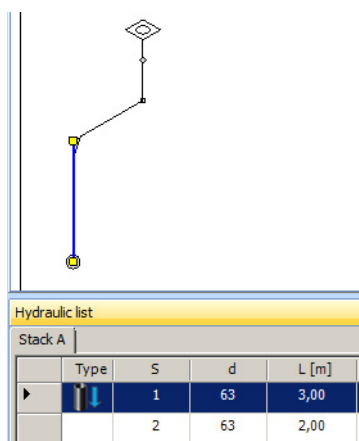
You can change the settings for outlets while drawing. Proceed as follows:

1. Press and hold down **Ctrl** and click on the roof outlets, one after each other, the settings of which you wish to change.
→ The highlighted outlets have a coloured background.
2. Right-click in the area with a coloured background and select **Properties** in the pop-up menu.
3. In the **configuration** field, select **Roof Drainage System**.
4. Change the **Target volumetric flow rate** and/or the **Length** and confirm with **OK**.
→ The volumetric flow rate and length are changed for the highlighted roof outlets. All existing and new roof outlets retain their current settings.

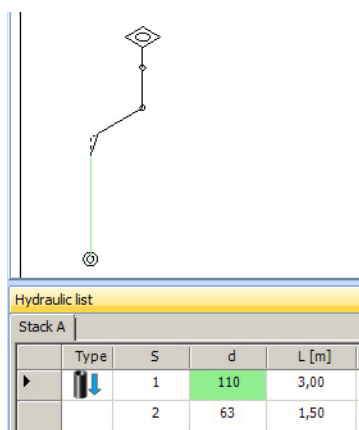
Changing properties in the hydraulic list

The hydraulic list appears after a calculation and lists the properties of all the objects in a stack. You can change the target volumetric flow rate of outlets, the dimensions of objects and the length of the pipes here.

1. Click on **Window** in the **View** menu and select **Hydraulic list**.
2. Click on a line to highlight an object.
→ The highlighted object appears blue in the drawing.



3. Change the values in the hydraulic list.
→ Changed diameters have a green background in the hydraulic list. The changed object is shown in green.





4. Calculate the subproject to retain the manually specified values and recalculate the other values.



Switch between the fields in the hydraulic list using the arrow keys. Use the **Enter** key to move to the next line. To change the pipe length, use the **Enter** key to move between the fields. Use the scroll wheel to change the values.

Defining the transition section

There are four types of pipe. The type of pipe (outlet pipe, stack, collector pipe, etc.) is assigned automatically during the drawing procedure. In most countries, you will have to assign a transition section later.

A transition section is needed if a stack ends directly in an underground pipe connection. The discharge speed is then too high. Even in other cases, it may be necessary to define the pipe directly upstream of the underground pipe connection as a transition section (country-specific).

A transition section is needed if stacks that are too long create too great a pulling effect. A transition section means the hydraulic decoupling from the negative pressure system. When the flow speed exceeds the maximum flow rate, the diameter of the transition section pipe is expanded in relation to the upstream pipe.

1. If a stack ends directly in the underground pipe connection, disconnect the stack ([see page 45](#)).
2. Right-click on the pipe directly downstream of the underground pipe connection and select **Properties** in the pop-up menu.
3. In the **Pipe type** field, select **Transition section**.
4. Click on **OK** to apply the entries.



The dimensioning of the transition section is specific to each country. Switch to a conventional waste and drainage system to avoid complete filling of the pipe. The pipe system is generally expanded by the pipe dimensions and is calculated on the basis of a maximum flow rate.

2.10 Helper Functions

You can use the helper functions to optimise your plan for calculation ([see page 53](#)).

Delete unconnected objects

You can delete all unconnected objects at the same time. This command is useful if a calculation is not possible because the drawing still includes unconnected objects.

1. In the **Roof Drainage System** window, click on **Helper functions**.
2. Click on **Delete unconnected objects**.



Fixing pipe dimensions

You can fix the dimensions of the pipes but still change the length. If you have calculated using the **Optimise dimensions** function, we would recommend fixing the dimensions as the dimensions could be lost following a further calculation.

1. In the **Roof Drainage System** window, click on **Helper functions**.
2. Click on **Lock all pipe dimensions**.



Freeing pipe dimensions

Proceed as follows to cancel the fixed pipe dimensions:

1. In the **Roof Drainage System** window, click on **Helper functions**.
2. Click on **Free all pipe dimensions**.



2.11 Defining Fastening Types

You can define uniform fastenings or fastenings for individual pipes. You can also display the different fastening types in the drawing with different colours for your information.

Uniform fastenings

1. Click on **Roof Drainage System subproject settings** in the **Roof Drainage System** menu.
2. Click on **Fastenings** and select the relevant fastening type.
3. Confirm with **Finish**.
 - The fastenings are carried over to the drawing.

Fastening type for individual pipes

1. Double-click on the pipe to which you wish to assign a specific fastening type.
2. Select the relevant fastening type in the Properties of the object and confirm with **OK**.

Colour visualisation of the fastening types

1. Click on **Display** in the **Roof Drainage System** window.
2. Select **Display fastenings**.
 - The pipes are given a coloured background according to the fastening type.
3. To display the meaning of the colours, check **Product range and fastening legend**.
 - The legend appears in the drawing. Changes will be automatically carried over.

2.12 Inserting Text

You can insert text into drawings.



1. Click on **Insert texts** in the **Roof Drainage System** menu.
 - The cursor assumes the following shape:



2. Click on the position in the drawing area where you wish to insert the text.
3. Write the text into the input field in the **Text properties** window.
4. Click on the relevant buttons to change the font size, text colour, background, border and text position.
5. Click on **OK**.
 - The text appears in the drawing area.
6. Press **Esc** to exit Text mode.
7. Press and hold down your mouse button to drag the text to the right position.



Use the keyboard shortcuts **Ctrl + C** and **Ctrl + V** to paste texts from word processing programs into the **Text properties** window.

2.13 Calculation

The following prerequisites have to be met before you can start a calculation.

- At least one roof outlet and one underground pipe connection have been planned
- Roof outlets have been set at all upper ends of the pipes
- Each object has been connected

Calculating the subproject



- ▶ To start the calculation of a subproject, click on **Calculate subproject** in the **Edit** menu.

Calling up the message list

You can call up information in the **message list** as soon as the calculation has been successfully completed. Error messages are shown in red, warnings in blue and information in black. You can select which **type** of message will be displayed in the right-click pop-up menu.

1. Click on **Window** in the **View** menu and select **Message list**.
2. Double-click on the error message in the **message list**.
 - ➔ The incorrect object will be colour-highlighted according to the message.

Optimising dimensioning

You can automatically correct incorrect plans in the Roof Drainage System module. In order to obtain a better hydraulic balance, the dimensions of the planned pipes are determined by several iteration loops based on the existing planning and subproject settings.

The optimisation of the dimensions is cancelled again by recalculating the subproject. Fix the pipe dimensions in the **Helper functions** to retain these optimised dimensions.



The calculation only optimises the dimensions of the pipes. Roof outlets and other parameters are not taken into consideration. The calculation can take some time depending on the extent of planning.



- ▶ Click on **Optimise dimensioning** in the **Roof Drainage System** menu.
 - ➔ The **Optimise DN** window appears. The window closes automatically once the calculation has been completed.

2.14 Hydraulic List for Roof Drainage System

All sections of the planned drainage system are listed in the hydraulic list. The properties of each section, such as length and diameter as well as volumetric flow rate, pressure and flow velocity, are displayed as the result of the calculation in table view. The content of the Hydraulic list changes according to the market set (calculations based on DIN 1986-100 (2008-05) or PSI). Incorrect values are shown in red in the table. Warnings are shown in blue

The following values can be adjusted by clicking into the corresponding cells:

- Diameter (d)
- Length (L)
- Target volumetric flow rate (V target) for roof outlets

Cells with calculated values cannot be selected.

Hydraulic List for Roof Drainage System

Changing values in the hydraulic list

1. Click on **Window** in the **View** menu and select **Hydraulic list**.
2. Click on a line to highlight an object.
→ The highlighted object appears blue in the drawing.
3. Change the values in the hydraulic list.
→ Changed diameters are highlighted in green.
4. Double-click on an object in the **Type** field to adjust the properties of an object.
5. Calculate the subproject to retain the manually specified values and recalculate the other values.



Switch between the fields in the hydraulic list using the arrow keys. Use the **Enter** key to move to the next line. To change the pipe length, use the **Enter** key to move between the fields. Use the scroll wheel to change the values.

Content of the hydraulic list

After calculating with the Psi+ method, the hydraulic list contains the following values:

Column	Description
Type	Pipe types, for instance stack, collector pipe or outlet pipe (country-specific and standard-specific)
TS	Section
d [mm]	Outside diameter
L [m]	Length of the pipe
h [m]	Vertical length of the section (height)
Vtarget [l/s]	Target volumetric flow rate
V [l/s]	Volumetric flow rate
Pressure at the beginning of section [mbar]	Pressure at the beginning of section, seen in the direction of flow
p x [mbar]	Pressure at the end of section, seen in the direction of flow
v [m/s]	Flow velocity
Psi [%]	Factor of air-water mixture
Zeta value	Zeta value, loss coefficient
L*R+Z [mbar]	Pressure loss from pipe friction and individual resistance
R [mbar/m]	Pipe friction pressure drop
V.A.min [l/s]	Minimum start volumetric flow rate
V A [l/s]	Start volumetric flow rate
V Mix [l/s]	Volumetric flow rate at air-water mixture
Psi.A [%]	Psi value in start volumetric flow rate
V.Mix.A [l/s]	Start volumetric flow rate at air-water mixture

2.15 Printing Graphics

You have the option of printing individual graphics or the graphics of all subprojects within a project simultaneously in the Roof Drainage System module. You can also print graphics together with the lists, e. g. together with the material list. The graphics have to lie within the drawing frame for you to be able to print them. You can move the Drawing frame ([see page 26](#)).

Printing all graphics

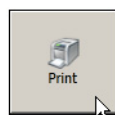


1. Click on **Print graphic** in the **File** menu.
2. Define the **Printer/plotter** the **Paper format** and the Page alignment in the **Print/plot graphic** window.
3. Click on **Printer settings**, to enter other settings for the printer.
4. Select **Print all subprojects** in the **Print area**.
5. Select the print margin from the upper (X), left (Y) page margin.
6. Specify the **Print scale**.
7. Click on **Preview** to check the settings.
8. Close the preview and click on **Print**.

Printing graphics with lists



1. Click on **Print lists** in the **File** menu.
2. Select the subprojects and modules you require under **Source data**.
3. In the **Lists** area, open the **Roof Drainage System** list type.
4. Check **Graphic print**, to select the drawing for printing.
5. Select other list types if you wish.
6. Select a printer in the **Output** area.
7. Click on **Printer settings**, to enter other settings for the printer.
8. Click on **Print** to start the print process.



You will learn here how to enter settings and print other lists ([see page 157](#)).

3 Installation Systems

With the Installation Systems module you can create cost estimates, specifications of services and quotations for Duofix or GIS constructions quickly and easily. You can assemble and calculate as many installation walls, objects and articles as you wish. You can import installation walls in the Detailed Planning 3D module.

3.1 User Interface

The following window appears once you have created a new project (**File > Create new project**) for Installation Systems:

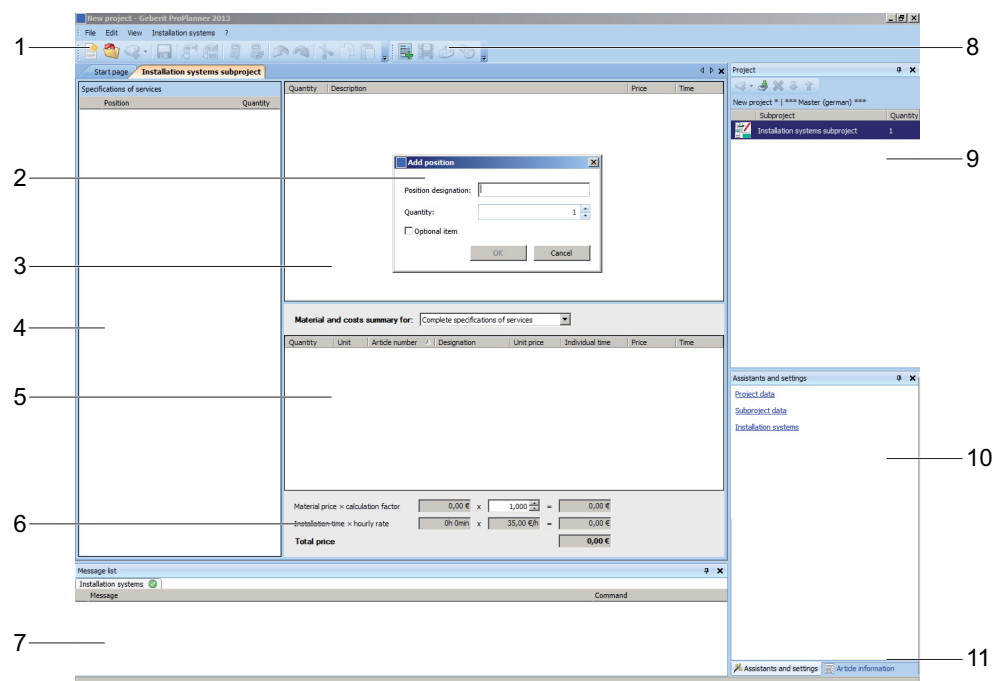


Fig. 3-1 Installation Systems user interface

- (1) General toolbar ([see page 10](#))
- (2) Add window position ([see page 56](#))
- (3) Position elements window ([see page 57](#))
- (4) Specifications of services ([see page 57](#))
- (5) Material and costs summary ([see page 71](#))
- (6) Pricing ([see page 71](#))
- (7) Message list ([see page 57](#))
- (8) Installation Systems toolbar ([see page 57](#))
- (9) Project window ([see page 58](#))
- (10) Assistants and settings window ([see page 58](#))
- (11) Article information window ([see page 58](#))

Add position window


Dialog window for entering position descriptions and quantity appears when a new subproject was opened or can be called up using the **Add position** button.

Specifications of services

The specification of services lists all the items. In order to add material, there has to be at least one item in the specification of services. When starting a new subproject, ProPlanner requests a position description to be entered using a dialog. The procedure is described in the chapter entitled Adding Item ([see page 60](#)).

Position elements window

The **Position elements** window displays the content of an active position from the specification of services which can be edited by double-clicking on it. The following information is listed:

- Quantity of walls with the same properties
- The selected installation system (Duofix or GIS)
- The selected base wall (solid or lightweight wall)
- The selected wall type (Prewall, Room separator, Room-height/part-height combination, Corner construction), the geometry and the dimensions in cm
- The price for the required materials and the time calculated for the construction of the installation wall
- Clicking on  lists detailed information on the wall properties (Objects, Acoustic insulation, Installation system and Panels)

Material and costs summary

A Material and costs summary can be displayed for the total specification of services or for a selected item. The table overview provides information on the Quantity, Article number, Individual and Total price and the Installation time required.

Pricing

You can adjust the calculation factor and the hourly rate for the calculation of the quotation price. All other values are provided by ProPlanner.






The presettings for the calculation factor and hourly rate depend on the market entered.


Message list

Information will appear in the message list if errors occur when transferring an old project into a newer version of ProPlanner. Articles that are no longer in the product range can be adapted in the **Command** field.

Installation Systems Toolbar






The following symbols are used to enter installation walls and materials and are only available for the Installation Systems module.

Button	Command
	Add item
	Add installation wall
	Add object

Button	Command
	Add articles

Project window

The Project window displays the project currently open with its subprojects. The following buttons are available for adaptation:

Button	Command
	New subproject
	Import subproject
	Delete subproject
	Move subproject down
	Move subproject up

Projects and subprojects marked with an asterisk have not yet been saved.

Assistants and settings window

You can perform the following functions in the **Assistants and settings** window:

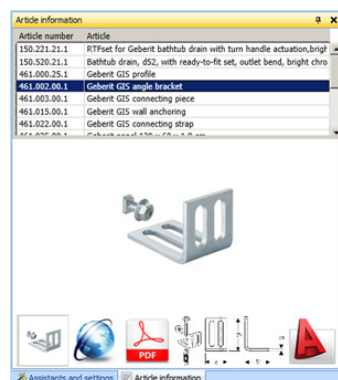
- Enter project data and subproject data ([see page 13](#))
- Define subproject settings for Installation Systems ([see page 59](#))

Article information window

As soon as items have been entered, you can call up views, dimensions and installation manuals for articles from the Geberit product range in the **Article information** window. You need an active Internet connection to do so.

You can obtain the following information:

- Photo and drawing of a selected article
- Drawing with dimensions
- Installation manual in PDF format
- ZIP file with CAD drawing in DWG or DXF format
- Link to the Geberit Product Catalogue





The **Article information** also appears as soon as you add Objects ([see page 69](#)) and Articles ([see page 70](#)) to your subproject.

3.2 Assistants and Settings

You have the following setting options in the **Assistants and settings** window:

- Project data: ([see page 13](#)) General data on the project can be entered
- Subproject data: ([see page 14](#)) General data on the subproject can be entered
- Installation Systems: ([see page 59](#)) Settings for installation walls, the building and GIS prefabrication can be entered

3.2.1 Installation Systems Subproject Settings

Subproject settings can be specified for the following points:

- Installation wall presets
- Building settings
- GIS prefabrication settings
- Settings for the fastenings, panelling and acoustic insulation of a GIS installation wall

These subproject settings are carried over when entering an installation wall. The settings can be adjusted separately for each wall when entering it in the **Fast entry** window.

Changes to subproject settings do not affect previously created installation walls.

GIS installation walls can be prefabricated off site to save time and costs. With prefabrication, the walls can be divided into segments that do not exceed a certain size, thereby enabling structural conditions on site to be taken into consideration.

Changing settings

1. In the **Assistants and settings** window click on **Installation Systems**.
2. Specify the settings for the installation walls and the building.
3. Select GIS as the **Installation system** to define wall segments for **GIS prefabrication**.
4. Click on **GIS** and tick the **Prefabricate GIS installation walls** checkbox.
5. Specify the distance of the **Profile connectors** and the dimensions [cm] for the **Wall segments**.
6. Select **Fastening**.
7. Uncheck the **Use GIS wall fixation** checkbox if no additional fastenings of the fastening system are to be calculated on the building structure (only German market).
8. Select **Panelling** and **Acoustic insulation**.
9. Click on **Finish**, to save your settings.



Note that the settings apply to **all existing and new** items on the specification of services. You can reset the settings at any time using the **Installation Systems** menu.

Changing installation walls

You can change specific settings for individual positions or all items in the specification of services.

- ▶ In the **Installation Systems** menu click on **Change installation walls** and select one of the following points:
 - Acoustic insulation
 - Panelling
 - Sanitary objects
 - Prefabrication

Defining the calculation factor and hourly rate

- ▶ Enter the corresponding values in the area below the **Material and cost summary**.

3.3 Adding and Adjusting Positions

You enter various positions in the **specification of services** for which you can create material lists. You require at least one position in the **specification of services** to be able to select material for a cost summary. You will automatically be called upon to enter a position as soon as you have started a new subproject in the Installation Systems module.

3.3.1 Adding Items

Before you can add material, there has to be at least one item in the specification of services. Proceed as follows to add an item to the specification of services:



1. Click on **Add item** in the **Installation Systems** menu.
2. Enter a name for the item in the **Item designation** field.
3. Define how often the item is to be calculated in the **Number** field ([see page 61](#)).
4. Check the box to add an **Optional item**. Optional items are listed in the specification of service but are not taken into account in the quotation price.
 - The optional item is listed in italics in the specification of service.
5. Confirm with **OK**.
 - The new item is listed in the specification of service.

Converting an existing item into an optional item.

It is possible to convert an existing item into an optional item, and vice versa, in every specification of service.

- ▶ Right-click on an item in the specification of service and select **Optional item** in the pop-up menu.
 - The item has been converted.

3.3.2 Renaming Positions

You can give the individual positions in the **specification of services** a new name at any time.

1. Right-click on a position in the specification of services that you wish to rename.
2. Select **Rename** in the pop-up menu.
3. Enter a new name.
4. Click in the **Specification of services** window.
 - The name will be applied to the selected position.

3.3.3 Duplicating, Copying and Deleting Items

You have the option in the Installation Systems module of replicating items for quickly determining the quantities of combinations of materials.

Duplicating items

As soon as you have combined and defined the quantity of material for an item, you can replicate the quantity for the entire combination. The material and cost summary is adjusted accordingly.

1. Select an item in the **Specification of service** and click on the **Quantity** field.
2. Enter a figure, by the factor of which you wish to increase the quantity of material.
3. Press **Enter**.
 - The material quantities are adjusted in the **Material and cost summary**.

Copying items

You can copy an item in the **Specification of service**, if for example, you require an almost identical material composition and only wish to change a few items.

1. Right-click on an item in the **Specification of service** and select **Copy**.
2. Right-click in the **Specification of service** window and select **Paste** in the pop-up menu.
 - A copy of the selected item is created in the **Specification of service**.

Deleting items

- Right-click on an item in the **Specification of service** and select **Delete** in the pop-up menu.

3.4 Fast Entry Window

You can add installation walls, objects and articles to any position in the specification of services in the **Fast entry** window in the Installation Systems module. The individual material lists are displayed in the **Position elements** window and can be edited there. Before you can add objects and articles, there must be at least one position in the specification of services.

1. Highlight an item in the specification of service.
2. Click on **Add installation wall** in the **Installation Systems** menu.
→ The **Fast entry** window appears:



- In the **Installation wall** tab, you can select objects and calculate a Duofix/GIS wall
- In the **Object** tab, you can add individual Duofix/GIS objects with a total quantity of mounting materials. You require this tab, for example, if you wish to specify separately wall materials and Duofix/GIS objects
- You will find all the articles you require from the Geberit product range and also additional popular articles in the **Articles** tab. You can select and add these articles so that they appear on the material lists

3.5 Adding Installation Walls

Requirements:


At least one position has been entered in the specification of services.



The selection of the wall type has a direct effect on the visualisation in the **Wall coupling** area, on the input options in the **Dimension** area and on the visualisation in the preview. Therefore, always define the wall type first.



1. Click on **Add installation wall** in the **Installation Systems** menu.
→ The **Fast entry** window appears.
2. Select the Wall type (see page 63).
3. Define the Wall coupling (see page 63) of the installation wall.
4. Select the Dimensions (see page 63) of the wall and, if necessary, of the part wall.
5. Select the Wall properties (see page 63).
6. Select the Object distance (see page 64).
7. Add the Objects (see page 64) required.
8. Position (see page 65) the selected objects and possibly define the installation height and docking side.
9. Specify the Room properties (see page 65) using the **Room height** and the **Height of floor construction**.

10. Check your selection in the preview (see page 65).
11. Click on the  button to enlarge the preview of the wall. The button is located under the **Wall coupling** area.
12. Click on **Enter** to add the installation wall to the position.
→ The **Fast entry** window remains open. You can add further installation walls.
13. Click on **Finish** to add the installation wall to the position and close the window.

3.5.1 Wall Properties

If you Add an installation wall (see page 62), you can specify the following properties for a wall in the **Fast entry** window.

Wall type

Specify the following in the **Wall type** area:

- Number of installation walls
- Installation system (Duofix or GIS)
- Base wall (solid wall or lightweight wall)
- Wall type (prewall or partition, room-height/part-height combination, corner construction)

The selection of the wall type has a direct effect on the visualisation in the **Wall coupling** area, on the input options in the **Dimension** area and on the visualisation in the preview. Therefore, always define the wall type first.

Wall coupling

The **Wall coupling** depends on:

- The wall type selected (prewall, room separator, room-height/part-height combination and corner construction)
- The selected position (left, right, on both sides, free-standing)

The selected wall coupling is displayed in the preview accordingly.

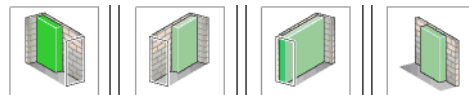



Fig. 3-2 Wall couplings for solid, room-height GIS prewall

Dimensions

Define the following in the **Dimensions** area:

- Height above FFL, width and depth of the selected installation wall in cm
- Height and width of the part wall if you have selected the **Room-height/part-height combination** as the wall type.

Changes to the dimensions result in a respective adaptation of the preview. The dimensions can be shown and hidden in the preview.

You can call up PDF format data sheets containing information on the minimum depths of GIS and Duofix installation walls via the  info symbol. The information depends on the **Wall type** selected.

Wall properties

Select **Panelling** and **Acoustic insulation** in the **Wall properties** area. You can switch prefabrication on or off and select whether sanitary objects should be included in the calculation.

3.5.2 Objects

If you add an installation wall ([see page 62](#)), you can define the distance between objects and the position of objects in the **Fast entry** window. You can select different object types from a list.

Object distance






Specify at what spacing the new objects are inserted in the **Object distance** area.

- The minimum distance means that a practical minimum distance that can be used is entered in ProPlanner
- Use the entry direction to define whether new objects are inserted from left to right or from right to left.
- Distances are measured from the middle axis of the objects
- You can enter a negative value in the **Distance** field. The object is then positioned on the left

Object selection

The **Object** area contains:

- A list (directory tree) of all available objects (product range)
- The option to create and display a Favorites list ([see page 67](#))
- A window for the added objects
- Buttons for adding and deleting objects
- The option to display the configuration of an object



Button	Command
	Add object to Favorites (see page 67)
	Display object configuration (see page 67) You can adapt the following properties: <ul style="list-style-type: none"> • Object type • Material group • Object size in ceramic appliance data The Article information (see page 58) also appears
	Insert object in installation wall The object is shown in the right-hand window and appears in the preview
	Delete checked object from installation wall
	Delete all objects from installation wall



- By double-clicking on the top level in the directory tree, you can automatically add the standard element from the object group (bathtub, bidet, washbasin etc.).
- As soon as you hover over an added object, the description, dimensions and article number of the object are displayed in a screen tip.

Object position

After adding an object, you can adjust the installation height and position in the **Object position** area. The docking side can be determined for certain objects (e. g. bathtub or shower tray).

Field	Function
Installation height	Object height measured from FFL
Position from left	Object distance from the left-hand fixed wall
Docking side	Rotate object  clockwise or  counterclockwise



You can also move the valves of certain objects, such as shower trays or bathtubs, using the arrow keys. To do so, select the valve in the preview.

3.5.3 Room Properties and Room View

If you add an installation wall ([see page 62](#)), you can display the dimensions of the room and display the positions of the objects in different views in the **Fast entry** window.

Room properties

The room height is defined in the subproject settings ([see page 59](#)) for Installation Systems. The floor construction is adapted in the **Room properties** area.

The room height is the clear height between the finished floor (FFL) and the ceiling.




Preview









The preview provides the option of displaying the wall and objects in various perspectives and dimensions and printing and exporting them. If a partition wall was selected as the wall type, the front and reverse side can be displayed in the view. Objects are mounted on the wall side of the partition wall currently selected in the preview.

The height of the floor construction is indicated in the preview by a black line.

If the wall dimensions or the position of an object have to be adjusted, the object appears red. A tool tip (Quick Info) provides information about the error that can be automatically corrected.

The buttons in the preview offer the following functionalities:

Button	Command
	Select and position. Use the arrow keys for positioning in cm. Use the arrow keys while simultaneously pressing Ctrl when positioning in mm.
	Navigation. The drawing area can be moved in Navigation mode. Use the arrow keys for this
	Display dimension lines You can move the dimension lines with your mouse

Button	Command
	Side view
	Front view
	Plan view
	Print. The preview can be printed directly. Possible settings depend on the printer used
	Graphics export. The preview can be exported in various formats (e. g. TIFF or JPG). The graphics can be exported in DXF and DWG formats for CAD drawings. The resolution, height and width can be selected for certain formats
	Display all. Set view to 100 %
	Zoom in
	Zoom out

3.5.4 Calling Up Object Pop-up Menu

The following functions are available in the pop-up menu of the objects that you have inserted into the installation wall in the **Fast entry window** :

- Delete selection
- Positioning
- Add mounting plate(s)
- Add compact unit
- Properties ([see page 67](#))
- Right-click on an object in the installation wall.
 - The pop-up menu opens.

Positioning objects

- Click on **Positioning** in the pop-up menu.
The following functions are available to you:

Command	Function
Centred	The object is placed centrally. With partial walls, the object is placed centrally in the partial wall
At the minimum distance from the previous object	The object is placed at a minimum distance from the object on the left (common profile or two profiles)
At the minimum distance to the next object	The object is placed at a minimum distance from the object on the right (common profile or two profiles)

Adding mounting plates

You can add mounting plates for support handles or similar to individual objects (e. g. shower trays).

- ▶ Click on **Add mounting plate(s)** in the pop-up menu.
The following functions are available to you:

Command	Function
Left (common profile or two profiles)	Mounting plate is placed to the left of the object
Right (common profile or two profiles)	Mounting plate is placed to the right of the object
On both sides (common profile or two profiles)	Mounting plates are placed to left and right of the object



All mounting plates can be installed without dimensional limits in the room-high Duofix and GIS installation walls.

3.5.5 Configuring Objects

If you have added objects to an installation wall, it is possible to configure them and adjust their properties. You can, for example, assign a specific flush panel to a WC.

Requirements:

- The **Fast entry** window with the **Installation wall** tab is open
- The object to be configured has been added to the installation wall

1. Highlight an **Object** in the right-hand area of the window.



2. Click on **Display object configuration**.
3. In the **Configuration** field, select **Object**.
4. Enter the required settings for the **Object**, **Installation type** and **Material group** fields.
5. Switch to the **Optional articles** tab.
6. Select the type and amount of the material you require.
7. Confirm your entries by clicking on **OK**.



You can also adjust the properties of an object by calling up the pop-up menu ([see page 66](#)) in the preview.

3.5.6 Favorites

You can create a list with objects that you use frequently in the **Fast entry**. You then have quick access to these objects when creating an installation wall. Use the Favorites list in the same way as the Product range list to create an installation wall.

Adding an object to favorites

Requirements:

The **Fast entry** window with the **Installation wall** tab is open.

1. Select an installation element from the list in the **Object** area.
2. Click on **Add object to Favorites**.
3. Repeat steps 1 and 2 for any other objects you wish.
4. Move in the selection field above the list from **All object types** to **Favorites**.
 - The Favorites list replaces the product range list.



Use the space bar to add a highlighted favorite from the Favorites list to the installation wall.



Favorites are available across all subprojects within a market. If you create Favorites in a Installation Systems subproject, you can also use these Favorites in other Installation Systems subprojects.

Creating a Favorites folder

You can file your favorites in folders to make the Favorites list clearer.



1. Right-click in the Favorites list and select **New favorites folder** in the pop-up menu.
 - The Favorites folder appears in the Favorites list.
2. Highlight the Favorites folder.
3. Select an object from the list and click on **Add object to Favorites**.
 - The object appear in the Favorites folder.
4. Highlight the Favorites folder.
5. Right-click on the Favorites folder and select **Collapse** to close the folder.
6. Right-click on the Favorites folder and select **Expand** to open the folder.



You can also use the arrow key ▲ to minimise and maximise the Favorites folder.

Renaming favorites

You can rename favorites.



1. Highlight an object or a Favorites folder in the Favorites list.
2. Right-click on the favorite and select **Rename** in the pop-up menu.
3. Enter a name for the Favourite.
4. Press **Enter** to confirm the name.

Exporting favorites

You can export favorites to exchange favorites between different ProPlanner installations. You can then file the favorites at a central place and access them from different locations.



Favorites can only be exported between subprojects of the same type within one market, from one ProPlanner installation and imported into another ProPlanner installation.



1. Highlight an object or a Favorites folder in the Favorites list.
2. Right-click on the favorite and select **Export** in the pop-up menu.

3. Enter a file name and select a storage location in the **Save As** window.
4. Click on **Save** and confirm the information window with **OK**.
→ A Favorites file with the file extension .gpf is saved.

Importing favorites

You can read exported favorites into every Installation Systems subproject within a market.



1. Right-click in the Favorites window and select **Import** in the pop-up menu.
2. Open the folder in which the Favorites file is saved.
3. Highlight the file and click on **Open** to import the favorites into your subproject.
4. Confirm the information window with **OK**.
→ Favorites appear in a new Favorites folder in the Favorites window.

Deleting a favourite

You can delete objects and the Favorites folder.



1. Highlight an object or a Favorites folder in the Favorites window.
2. Right-click on a favorite and select **Delete** in the pop-up menu.



Default favorites are available depending on the market (sales company).

3.5.7 Correcting Errors

Errors that occur when dimensioning the installation wall or positioning an objects are identified by ProPlanner and suggested for automatic correction. An incorrect object will be displayed in red in the preview in the **Fast entry** window. You can only create an installation wall when all of the errors have been remedied.

1. Hover over an incorrect object highlighted in red with your cursor.
→ The error will be displayed in a tool tip.
2. Click on the **Correct** link to remedy the error.

3.6 Adding Objects

Over and above the individual installation walls, you can add any objects additionally required (for instance a bathtub, washbasin, WC, etc.) to the specifications of services. These objects are then considered when printing lists ([see page 157](#)).

The objects contain the installation materials required for the respective wall type but do not affect the calculation of the Duofix or GIS construction.



1. Click on **Add object** in the **Installation Systems** menu.
2. In the **Installation system** field, choose either Duofix or GIS.
3. In the **Object type** field, select a group (e.g. bathtub, bidet or washbasin), to limit the selection.
4. Highlight an object in the list and select the desired number in the **Quantity** field.
5. Click on **Add**.
→ The object appears in the bottom **Selected objects** list.
6. Repeat steps 2 – 5 until you have added all the objects you require.

7. If you wish to remove an object, highlight it in the **Selected objects** list and click on **Remove**.
8. Click on **Enter**.
 - ➔ The selected objects are deleted from the lower list and listed in the **Position elements** window.
9. Click on **Finish**.
 - ➔ The object lists are displayed in the **Position elements** window.

3.7 Adding Articles

Over and above the individual installation walls, you can add any additional material required to the specification of services. The articles are then taken into consideration when printing lists ([see page 157](#)).

The **Articles** tab contains:

- All of the Duofix/GIS articles available in the Geberit product range
- A selection of commercially available products from other manufacturers

The other manufacturers' products are displayed without an article number.



1. Click on **Add article** in the **Installation Systems** menu.
2. Highlight the article you require in the list and select the number you require in the **Quantity** field.
3. Select one of the following options to simplify your search for an article:
 - Select **Hide third-party articles**.
 - Enter an **Article number** or an **Article designation** in the relevant fields.
4. Click on **Add**.
 - ➔ The selected object appears in the lower list **Selected articles**.
5. Repeat steps 2 – 5, until you have added all of the articles you require.
6. If you wish to remove an article, highlight it in the **Selected articles** list and click on **Remove**.
7. Click on **Enter**.
 - ➔ The selected objects are deleted from the **Selected articles** list and are listed in the **Position elements** window.
8. Click on **Finish**.
 - ➔ The article is displayed in the **Position elements** window.

3.8 Changing Quantity

You can copy the quantity of material in an item ([see page 61](#)) in the Installation Systems module. You also have the option of adjusting the number of installation walls and the quantity of individual objects and articles. The material and cost summary is adjusted accordingly.

Requirements:

Installation walls, individual articles or objects are entered in the **Position elements** window.

1. Select a material position in the **Position elements** window and click in the **Quantity** field.

Quantity	Description
1	Individual material list
	1 x DF WC-Paneel H130 B46 für UP320/UP200
1	Object list
	1 x 6 Eck Badewanne mit AP-Armatur (180x80x56)

2. Adjust the quantity for the selected material.
3. Press Enter.
 - ➔ The quantity of the material needed is adjusted for the calculation in the **Material and cost summary**.

3.9 Material and Cost Summary

A detailed summary can be displayed for the total specification of services or for a selected item.

The tabular overview provides information about the quantity, article number, unit and total price and the required installation time.

Clicking on [...](#) shows detailed information on the wall properties (Objects, Sound insulation, Installation system and Panels)

Pricing

You can adjust the calculation factor and the hourly rate for the calculation of the quotation price. You can change the calculation factor in the pricing area. The hourly rate is entered with the Project data ([see page 13](#)). All other values are provided by ProPlanner.

The following information is summarised:

Material price	Total of all items in the specification of services
Calculation factor	Is multiplied with the material price. Freely selectable by the user
Installation time	Total of all items in the specification of services
Hourly rate	Multiplied with the installation time. Freely selectable by the user when entering project data.
Total price	Total of material price and installation costs. Calculation factor and hourly rate are taken into consideration



Depending on the set market, the displayed value of the calculation factor and the hourly rate can vary.

The hourly rate and the calculation factor can also be adjusted or saved and defined as a new standard in the Print lists ([see page 157](#)) dialog window.

3.10 Data Sheets

ProPlanner offers the option of accessing various PDF data sheets for the planning of Duofix or GIS systems. The data sheets contain information on special applications. You will need **Acrobat Reader®** to view the data sheets.

1. Click on **?** in the menu bar.
2. Select **Data sheets**.
 - A folder appears containing PDF documents.

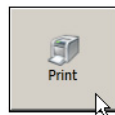
3.11 Printing Items

You can select as many items in the specification of service as you wish and print the following lists for the selected items:

- Material lists
- Quotations
- Bills of materials
- Installation instructions



1. Click on **Print lists** in the **File** menu.
2. Select **Current subproject** and **All modules** in the **Source data** area.
3. Open the range of list types in the **Lists** area.
4. Check or uncheck the checkboxes to select list types.
5. Select a printer in the **Output** area.
6. Click on **Print** to start the print process.



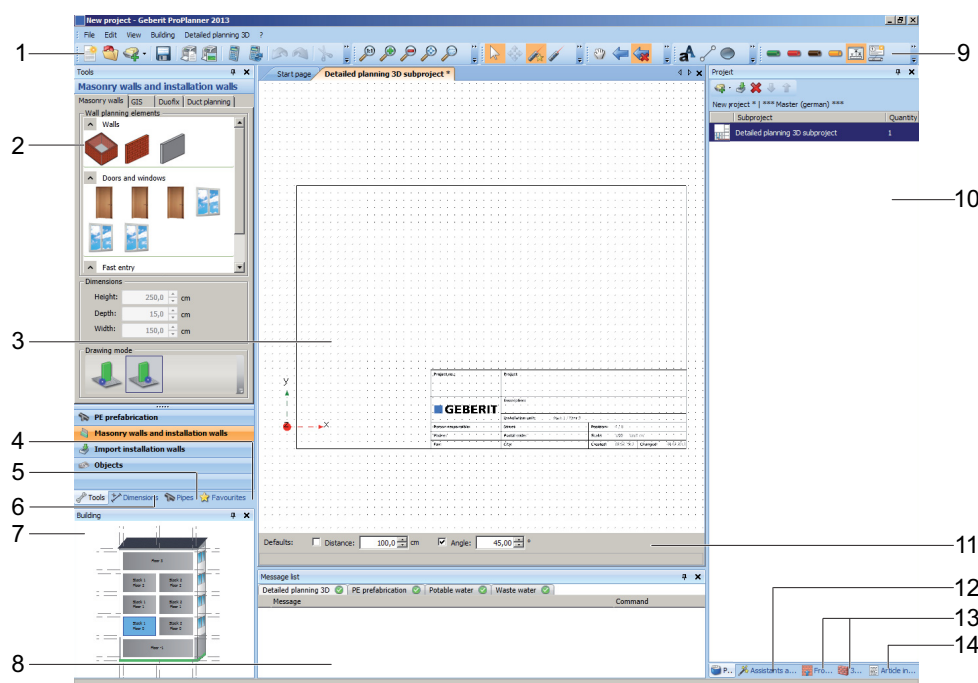
Further information on the topic of lists can be found here ([see page 157](#)).

4 Detailed Planning 3D

You can plan the Geberit Duofix or Geberit GIS installation systems with corresponding piping systems in the Detailed Planning 3D module. To do so you have a plan view, a front view or a 3D view available in which you can draw rooms with windows and doors as you wish. CAD drawings can be read to support you. Duofix and GIS installation walls can be designed as prewalls, partition walls (room separators), a combination of room-height and part-height walls, corner constructions or free-standing walls.

4.1 User Interface

After creating a new project (**File > Create new project**) for Detailed Planning 3D, the following window appears:



- (1) General toolbar ([see page 10](#))
- (2) Tools window ([see page 74](#))
- (3) Design Area window ([see page 75](#))
- (4) Favorites window ([see page 74](#))
- (5) Pipes window ([see page 74](#))
- (6) Dimensions window ([see page 74](#))
- (7) Building window ([see page 75](#))
- (8) Message list ([see page 75](#))
- (9) Detailed Planning 3D toolbar ([see page 75](#))
- (10) Project window ([see page 76](#))
- (11) Fast entry bar ([see page 77](#))
- (12) Assistants and settings window ([see page 77](#))
- (13) Front view and 3D view window ([see page 77](#))
- (14) Article information window ([see page 78](#))







You can reset the layout in **View > Layout > Standard layout**.

Tools window

The Tools window contains rooms, masonry walls, lightweight walls, installation walls (Duofix/GIS), wall/floor openings (doors and windows) as well as objects that you can use in your planning.

The content of the Tools window (the availability of the objects) adapts to the respective selected function:

Tab	Function
	Waste water prefabrication Product range for designing discharge pipes (pipes, branch fittings, bends, fastenings, etc.). PE and Silent-db20 are available as materials. Waste Water Prefabrication is not available in all markets.
	Objects Sanitary objects (bathtub, washbasin, WC, bidet, etc.)
	Walls and installation walls Objects and functions for planning masonry, installation walls and ducts. Individual dimensions and drawing modes can be defined for the objects. The following tabs are available: <ul style="list-style-type: none"> • Walls: Masonry (rooms, walls) and wall/floor openings (doors, windows), Fast entry for installation walls (see page 98) • GIS • Duofix • Duct planning: Ducts for water supply connections, heating, ventilation and electrical installations
	Import installation walls Import and edit installation walls created with the Installation Systems module

Favorites window

The Favorites window contains all objects that have been saved as favorites.

Pipes window

The **Pipes** window contains fittings and other helper functions that you can use to design the Waste Water Prefabrication for your installation.

Dimensions window

You can call up the following types of dimensions in the **Dimensions** window:

Tab	Function
Construction	Construction dimensions
Fabrication	Fabrication dimensions Used as the basis for installation and only appear in the front view
Other	Manual dimensions

Design Area window

Generate your plan for masonry and installation walls (Duofix/GIS) in the Design Area window. The following commands are possible:

- Import background plan ([see page 103](#))
- Create rooms and walls ([see page 107](#))
- Insert door and window openings ([see page 111](#))
- Insert objects ([see page 121](#))
- Edit rooms, walls and objects
- Import walls from installation systems
- Create walls using the Duofix/GIS wall fast entry ([see page 98](#))

Building window

The building in the Building window consists of floors, stacks and installation units and can be extended as required. Planning in the Design Area window applies to the highlighted installation unit. Imported background plans always apply to one installation unit.

Message list

Depending on the calculation, the Message list displays a report that contains calculation errors, warning notes and information. The messages for Detailed Planning 3D, Waste Water Prefabrication and the modules can be called up using the tabs and filtered according to **Type** using the right mouse key pop-up menu. **Information** type messages are issued as standard for the selected tab.

The following types are available in the pop-up menu:

Type	Explanation
Error	Only errors are displayed
Warning	Errors and warnings are displayed
Information	Errors, warnings and information are displayed (default setting)



- Double-clicking on the error message enlarges the error in the Design Area window and highlights it in red. A screen tip on the object explains the error.
- Errors can be corrected in the message list using the **Command** column or in the screen tip in the Design Area window.

Detailed Planning 3D toolbar






You can call up the following commands via the toolbar:

Button	Command
	Select objects
	Move objects
	Assign reference point automatically
	Set reference point
	Import background plan Image files can be imported

Button	Command
	Move drawing area
	Set front view layer
	Display front view layer
	Open layer
	Insert text You can set the font type, text colour etc. when designing
	Insert line
	Insert ellipse
	Cold potable water (CPW)
	Hot potable water (HPW)
	Waste water
	Ventilation pipes
	Continuous request for pipe properties The pipe position and gradient of waste water pipes are automatically requested when drawing pipes
	Create infotexts for all pipes
	Remove all infotexts
	Move infotext

Project window

The Project window displays the project currently open with its subprojects. The following buttons are available for adaptation:

Button	Command
	Add new subproject
	Import subproject
	Delete subproject
	Move subproject down
	Move subproject up

Projects and subprojects marked with an asterisk have not yet been saved.

Fast entry bar

Use the fast entry bar to enter distances and define angles for changes in direction to draw walls, installation walls and pipes. The settings only apply to new sections. You can also change the settings of existing pipes.

Assistants and settings window

You can perform the following functions in the **Assistants and settings** window:



- Change settings for installation units ([see page 79](#))
- Enter project data and subproject data ([see page 13](#))
- Define building properties ([see page 86](#))
- Show and hide layers ([see page 90](#))
- Define subproject settings for Detailed Planning 3D and Waste Water Prefabrication (market-specific)
- Define subproject settings for Potable water ([see page 81](#)) and Waste water ([see page 84](#))

Front view and 3D view window



The **Front view** and **3D view** windows are possibly not visible when you start up ProPlanner for the first time. In each case you can show the windows via the **View > Window** menu. You can switch to the respective window with the corresponding tab.

Alternatively, you can call up an appropriately configured layout (**View > Layout > ...**) ([see page 15](#)).

Window	Function
	Front view Shows each view selected in the front view. Gives an overview of the profiles and dimensions required. <ul style="list-style-type: none"> • Zoom: Move the mouse wheel backwards or forwards • Move: Move the mouse with the wheel held down
	3D view Gives a spatial impression of the plan. <ul style="list-style-type: none"> • Zoom: Move the mouse wheel backwards or forwards • Turn: Move the mouse with the right mouse key held down • Move: Move the mouse with the wheel held down

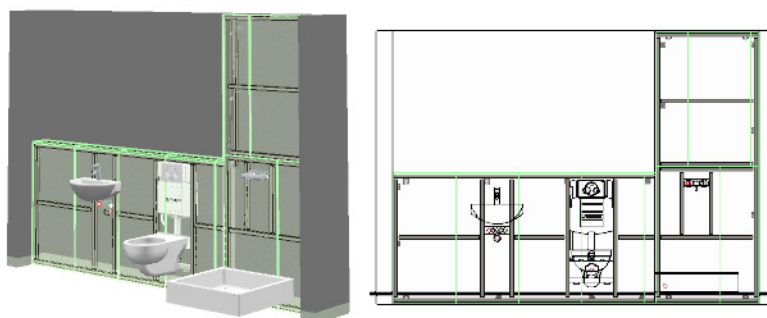


Fig. 4-1 Example of a 3D view (left) and a front view of a GIS installation wall

Article information window

As soon as a subproject has been calculated, you can call up views, dimensions and installation manuals for articles from the Geberit product range in the **Article information** window. You need an active Internet connection to do so.

You can obtain the following information:

- Photo and drawing of a selected article
- Drawing with dimensions
- Installation manual in PDF format
- ZIP file with CAD drawing in DWG or DXF format
- Link to the Geberit Product Catalogue



Article information also appears as soon as you add an article ([see page 159](#)) to your subproject and as soon as you call up Object properties ([see page 127](#)).

4.2 Wizards and settings

The following setting options are available in the **Wizards and settings** window:

- Project data: ([see page 13](#)) General data on the project can be entered
- Subproject data: ([see page 14](#)) General data on the subproject can be entered
- Building: ([see page 86](#)) Building properties can be defined
- Layer: ([see page 90](#)) Drawing layers can be shown and blocked
- Potable water: ([see page 81](#)) Material for the calculation of the potable water installation can be selected
- Waste water: ([see page 84](#)) Material for the calculation of the waste water installation can be selected
- Change potable water settings on installation units: ([see page 79](#)) Settings for existing installation units in a Potable water installation can be changed
- Change waste water settings on installation units: ([see page 79](#)) Settings for existing installation units in a waste water installation can be changed
- Detailed Planning 3D: Subproject settings can be entered for the following areas:
 - Drawing area ([see page 87](#))
 - Grid ([see page 88](#))
 - Dimension lines ([see page 88](#))
 - Prefabricate GIS installation walls ([see page 88](#))
 - Waste Water Prefabrication (market-specific)

4.2.1 Changing Settings for Installation Units

The settings for individual installation units can be changed for each module. It does not matter whether objects have already been planned in this installation unit.

1. Click on one of the following assistants in the **Assistants and settings** window:
 - **Change potable water settings on installation units**
 - **Change waste water settings on installation units**
2. Highlight one or more installation units.
3. Click on **Next** and change the settings.
4. Click on the button with the arrow to define settings for individual pipe types.
5. Confirm with **Finish** and recalculate the project ([see page 16](#)).

Potable water settings

The following settings can be changed for potable water:

Field	Remark
Use type and simultaneity factor	<p>The peak volumetric flow rate is calculated on the basis of this setting (according to country-specific norms).</p> <p>Choice between different types of building use (residential building, hotel, school, etc.) or user-defined (value between zero and one without a dimension):</p> <p>A higher value produces a high peak volumetric flow rate</p>
Pipe position above UFFL [m]	Defines the pipe height above unfinished floor level
Maximum flow velocity [m/s]	Can be set separately for individual pipe types
Ambient temperature [°C]	The heat loss and the required insulation are calculated from the ambient temperature
Horizontal fastening	<ul style="list-style-type: none"> • None • Concealed in the floor • Concealed in the wall • Exposed <p>Can be set separately for individual pipe types</p>
Vertical fastening	<ul style="list-style-type: none"> • None • Concealed in a duct • Concealed in the wall • Exposed <p>Can be set separately for individual pipe types</p>
Product range	<ul style="list-style-type: none"> • Mepla • PushFit system pipe ML • PushFit system pipe PB • Mapress Stainless Steel • Mapress Copper <p>Can be set separately for individual pipe types</p>

Field	Remark
Pipe material for Mepla	For Mepla material selection: <ul style="list-style-type: none"> • Roll • Roll (with protective tube) • Roll (preinsulated 6, 10 or 13 mm) • Rod
Pipe material for stainless steel	For stainless steel material selection: <ul style="list-style-type: none"> • 1.4401 CrNiMo steel • 1.4521 CrMoTi steel (according to market)
Pipe material for PushFit system pipe ML	For PushFit multilayer pipe material selection: <ul style="list-style-type: none"> • Roll • Roll (with protective tube) • Roll (preinsulated 6 mm) • Roll (preinsulated 10 mm)
Pipe material for PushFit system pipe PB	For PushFit polybutylene pipe material selection: <ul style="list-style-type: none"> • Roll • Roll (with protective tube)

Waste water settings

The following settings can be changed for waste water:

Field	Remark
Product range	<ul style="list-style-type: none"> • PE • Silent-db20 • Silent-PP Can be set separately for individual pipe types
Use / discharge value (K)	This coefficient can be set for different frequencies of use: <ul style="list-style-type: none"> • User-defined (0.50 – 1.20) • Irregular (0.50) • Regular (0.70) • Frequent (1.00) • Intensive (1.20)
Slope (J)	Can be set separately for individual pipe types (0 – 10 %)
Pipe position for discharge pipes above UFFL [m]	Measured from the unfinished floor level to the centre of the pipe
Pipe position for ventilation pipes above UFFL [m]	Measured from the unfinished floor level to the centre of the pipe (-2 – +6)
Connection diameter of WC	<ul style="list-style-type: none"> • DN 90 • DN 100
Sound insulation	<ul style="list-style-type: none"> • None • Insulation tapes (wall/floor openings) • Insulation hose (entire pipe) • Insulation hose (wall/floor openings) • Sound insulation mat Can be set separately for individual pipe types

Field	Remark
Fastening of horizontal pipes	<ul style="list-style-type: none"> • None • Embedded in concrete • Rigid installation with support shells • Rigid installation without support shells • Sliding installation with support shells • Sliding installation without support shells Can be set separately for individual pipe types
Fastening of vertical pipes	<ul style="list-style-type: none"> • None • Rigid installation without support shells • Sliding installation without support shells Can be set separately for individual pipe types
Connection	<ul style="list-style-type: none"> • Clamping connector (not available in all markets) • Electrofusion sleeve couplings • Butt welding Can be set separately for individual pipe types
Connecting material for embedding in concrete	<ul style="list-style-type: none"> • None • Ring seal sockets • Electrofusion sleeve couplings

4.2.2 Potable Water Subproject Settings

The settings for objects and pipes for the potable water installation are set to realistic values in ProPlanner. You can change the settings for every subproject.

Changing settings

1. Click on **Potable water** in the **Assistants and settings** window.
2. Adjust the settings for **Material determination**, **Calculation** and **Circulation**.
3. Click on the button with the arrow to define settings for individual pipe types.
4. Check **Save as default** to apply changed settings as default settings for other subprojects.
5. Click on **Next** or **Finish** to confirm your entries.
6. Click on **Calculate subproject** in the **Edit** menu to update your plan.



You can also change individual settings (Pipe height, Flow velocity and Material selection) separately for individual floors or installation units using Change settings for installation units (see page 79).

Material determination

The following settings are possible:

Field	Remark
Pipe position above UFFL	Defines the pipe height above unfinished floor level. Can be set separately for individual floors

Wizards and settings

Field	Remark
Horizontal fastening	<ul style="list-style-type: none"> • None • Concealed in the floor • Concealed in the wall • Exposed • Embed into concrete floor (only in Swiss market) Can be set separately for individual pipe types
Vertical fastening	<ul style="list-style-type: none"> • None • Concealed in a duct • Concealed in the wall • Exposed Can be set separately for individual pipe types
Product range	<ul style="list-style-type: none"> • Mepla • PushFit system pipe ML • PushFit system pipe PB • Mapress Stainless Steel • Mapress Copper Can be set separately for individual pipe types
Alternative product range for large diameters	<ul style="list-style-type: none"> • Mapress Stainless Steel • Mapress Copper
Alternative product range for PushFit	The material entered here is used for diameters of greater than 25 mm <ul style="list-style-type: none"> • Mepla • Mapress Stainless Steel • Mapress Copper
Use the smallest possible diameter	If checked, the smallest pipe diameter is used for the set pipe material. Mepla = DN 10 and Mapress = DN 10
Minimum connecting dimension DN15 for specific consumers (only Swiss market)	The connecting dimension can be defined for bathtubs, showers and kitchen sinks (cold water)
Pipe material for Mepla	<ul style="list-style-type: none"> • Roll • Roll (with protective tube) • Roll (preinsulated (6, 10 and 13 mm)) • Rod
Pipe material for stainless steel	<ul style="list-style-type: none"> • 1.4401 CrNiMo steel • 1.4521 CrNiTi steel
Pipe material for PushFit system pipe ML	<ul style="list-style-type: none"> • Roll • Roll (with protective tube) • Roll (preinsulated 6 or 10 mm)
Pipe material for PushFit system pipe PB	<ul style="list-style-type: none"> • Roll • Roll (with protective tube)
Preferred connection product range for PushFit (not available in Swiss market)	Gunmetal or brass
Use for changes in direction with Mepla and PushFit and also for smaller diameter fittings	Checked or unchecked The dimensions DN12, DN15 and DN20 can be selected

Field	Remark
Preferred angle of tap connector box (only available in Swiss market)	60° or 90°
Fitting range for Mepla (only in the Austrian market)	PVDF or brass



The pipe materials shown can vary depending on the market setting.

Calculation

The following settings are possible:

Field	Remark
Use type and simultaneity factor	The peak volumetric flow rate is calculated on the basis of this setting (according to country-specific standards). Selection between different types of building use (residential building, hotel, school, etc.) or user-defined (value between zero and one without a dimension). A higher value produces a high peak volumetric flow rate
Maximum flow rate [m/s]	Can be set separately for individual pipe types (0.5 – 5.0)
Floor installation based on maximum flow rate	If checked, the calculation is performed for the maximum flow rate. Installations of the same type are given the same diameter



The peak flow is determined, taking into account the simultaneity of water discharge (depending on the use type). You can also specify a user-defined use type (user-defined simultaneity). The peak flow rate is calculated accordingly.

Circulation

The following settings are possible:

Field	Remark
Ambient temperature [°C]	Separately adjustable for individual floors and the duct
Maximum flow rate up to d 26 [m/s]	Setting of the flow velocity in the circulation line up to d 26
Maximum flow rate above d 32 [m/s]	Setting of the flow velocity in the circulation line above d 32
Maximum temperature differential HPW and CPW-C [K]	Maximum temperature differential between Hot potable water and Circulation (3 – 10 Kelvin)

Field	Remark
Maximum draw-off time [s]	Maximum time that the water requires from the storage water heater to the end consumer. Can be increased if exceeded. However, increasing the maximum draw-off time reduces comfort. Setting range: 7 – 30 seconds

4.2.3 Waste Water Subproject Settings

The settings for objects and pipes for the Waste water installation are set to realistic values in ProPlanner. You can change the settings for every subproject.

Changing settings

1. In the **Assistants and settings** window click on **Waste water**.
2. Adjust the settings for **Calculation** and **Ventilation pipes and stacks**.
3. Click on the button with the arrow to define settings for individual pipe types.
4. Check **Save as default** to apply changed settings as default settings for other subprojects.
5. Click on **Next** or **Finish** to confirm your entries.
6. Click on **Calculate subproject** in the **Edit** menu to update your plan.



You can also change individual settings for the calculation separately for individual floors or installation units using Change settings for installation units ([see page 79](#)).

Calculation

The following settings are possible:

Field	Remark
Product range	<ul style="list-style-type: none"> • PE • Silent-db20 • Silent-PP Can be set separately for individual pipe types
Use / discharge value (K)	<ul style="list-style-type: none"> • User-defined (0.50 – 1.20) • Irregular (0.50) • Regular (0.70) • Frequent (1.00) • Intensive (1.20) This coefficient can be set for different frequencies of use
Slope (J)	Can be set separately for individual pipe types (0 – 10 %)
Pipe position for discharge pipes above UFFL [m]	Measured from the unfinished floor level to the centre of the pipe
Pipe position for ventilation pipes above UFFL [m]	Measured from the unfinished floor level to the centre of the pipe (-2 – +6)
Connection diameter of WC	DN 90 or DN 100

Wizards and settings

Field	Remark
Sound insulation	<ul style="list-style-type: none"> None Insulation tapes (wall/floor openings) Insulation hose (entire pipe) Insulation hose (wall/floor openings) Sound insulation mat Can be set separately for individual pipe types
Fastening of horizontal pipes	<ul style="list-style-type: none"> None Embedded in concrete Rigid installation with support shells Rigid installation without support shells Sliding installation with support shells Sliding installation without support shells Can be set separately for individual pipe types
Fastening of vertical pipes	<ul style="list-style-type: none"> None Rigid installation without support shells Sliding installation without support shells Can be set separately for individual pipe types
Connection	Type of pipe connection: <ul style="list-style-type: none"> Clamping connector (not available in all markets) Electrofusion sleeve couplings Butt welding Can be set separately for individual pipe types
Connecting material for embedding in concrete	<ul style="list-style-type: none"> None Ring seal sockets Electrofusion sleeve couplings

Ventilation pipes and stacks

The following settings are possible:

Field	Remark
Allow air admittance valves (a building requires at least one ventilation pipe via the roof)	Checked or unchecked
Ventilation type	Stack vent or secondary ventilation
Connection to stack	<ul style="list-style-type: none"> Branch fitting Branch fitting swept entry Y-branch 45° At least one stack must be taken above the roof

Connections

The following settings are possible for the Swiss market.

Field	Remark
Percentage of electrofusion sleeve couplings per dimension	Percentage number of electrofusion sleeve couplings for specific diameters. Setting applies to the total subproject

4.2.4 Building Properties

An installation unit in the building is assigned to each plan in the Design Area window in Detailed Planning 3D. The building consists of stacks (vertical) and floors (horizontal).

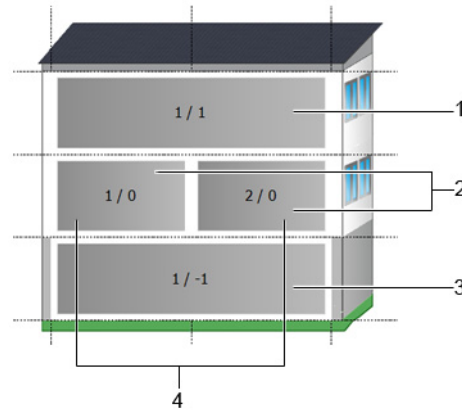


Fig. 4-2 Building with 3 floors and 2 stacks

- (1) Installation unit in the attic floor
- (2) Installation units in the upper floor
- (3) Installation unit in the underground floor
- (4) Stacks 1 and 2

Defining building properties

The building properties that you selected when creating the project are carried over as soon as you create a new subproject. The room height, floor construction and ceiling thickness are pre-set in ProPlanner with typical values depending on the respective country.

You can adapt the building properties at any time. You have the following options for calling up the building properties:

- Click on **Building** in the **Assistants and settings** window
- In the Building window using the right mouse key pop-up menu
- Select **Building properties** in the **Building** menu

Enter detailed settings for the floors, stacks and installation units as follows:

- In the Building window using the right mouse key pop-up menu
- Select the respective dimension (floor, stack, installation unit) in the **Building** menu

The following section describes how to change the building properties in the **Assistants and settings** window.

Changing building properties

1. Click on **Building** in the **Assistants and settings** window.
2. Highlight an installation unit and adapt the **Building size** and **Label**.
3. If you wish to change several installation units simultaneously, highlight them while holding down **Ctrl**.
4. To change the **Floor properties**, first highlight a floor and enter the new dimensions. Note the setting range.

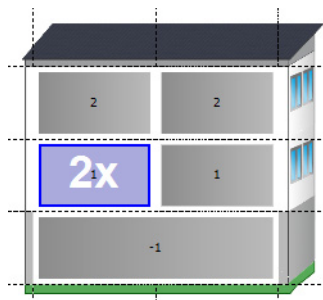
Field	Setting range
Room height (clear height between finished floor (FFL) and ceiling)	0.00 – 6.00 m
Floor construction	0.00 – 1.00 m
Ceiling thickness	0.00 – 1.00 m



Select more than 20 cm but a maximum of 40 cm for the floor construction.

→ The changed dimensions affect the length of the inter-floor pipes, such as stacks and riser pipes.

- Highlight one or more installation units and select the number in the **Multiplicity** field to define how often the material is to be calculated for certain installation units.



- Click on **Finish** to apply the settings.

4.2.5 Detailed Planning 3D subproject settings

4.2.5.1 Drawing Area

You can change the dimensions and alignment of the drawing area in the plan view and front view. The paper format set corresponds to the drawing frame in the Design Area window.

- Select one of the following options to open settings for the drawing area:
 - Double-click on the title block in the Design Area window.
 - In the **Assistants and settings** window, click on **Detailed Planning 3D** and select **Drawing area**.
- Specify the **Paper format**, **Alignment** and **Page margin** for the plan view and front view.
- Select the **Scale** of the drawing area in each case.
- Click on **Finish** to apply the settings.



You can zoom into the drawing area by rotating the mouse wheel. Hold down the mouse wheel to move the drawing area.

4.2.5.2 Grid

You can adjust the grid of the drawing area for more precise planning.

1. In the **Assistants and settings** window, click on Detailed Planning 3D and select **Grid**.
2. Specify the settings for the grid.
3. Click on **Finish** to apply the settings.

4.2.5.3 Dimension Lines

You can use dimension lines to dimension your drawing. You can also specify the display of the dimension lines.

1. In the **Assistants and settings** window, click on Detailed Planning 3D and select **Dimension lines**.
2. Specify the settings for the dimension lines.
3. Click on **Finish** to apply the settings.



The settings affect the construction dimensions, the fabrication dimensions and the manual dimensions.

4.2.5.4 Prefabricating GIS Installation Walls

The prefabrication of complete GIS installation walls off-site saves time and money. During prefabrication it is possible to specify that the walls are to be divided into segments that do not exceed a certain size. This enables structural conditions on site to be taken into consideration.

1. In the **Wizards and settings** window, click on Detailed Planning 3D and select **GIS**.
2. In the **Prefabricate GIS installation walls** select **Yes**.
3. Enter the required dimensions [cm] for the wall segments and the spacing of the profile connectors.
4. Select the **Distance between building structure and inside edge of profile**.
5. Check **Use long mounting brackets** to plan using long mounting brackets.
6. Select **Panelling** and **Acoustic insulation**.
7. Click on **Finish** to apply the settings.
 - The installation walls are divided on the basis of the selected settings.

4.3 View

You can move the drawing area or the drawing frame in the Design Area window, select a front view of your plan and show and hide parts of the drawing.

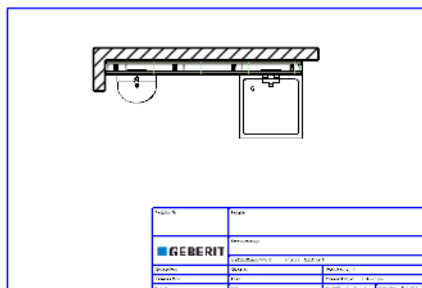
Moving the drawing area in the Design Area window



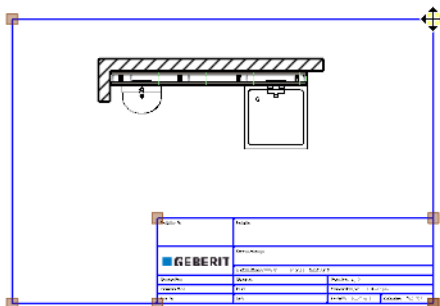
1. Select one of the following options to exit the drawing area:
 - Press the mouse wheel and move the drawing area.
 - In the **Detailed Planning 3D** menu, click on **Move drawing area** and move the drawing area with the left-mouse key held down.
2. Press **Esc** to exit moving mode.

Moving the drawing frame within the Design Area window

1. Highlight the drawing frame in the Design Area window.



2. Click on **Move objects** in the **Detailed Planning 3D** menu.
→ Move points are visible at the corners of the drawing frame.
3. Click on a move point and move the drawing frame by dragging it with the left mouse key held down.



4. Click in the Design Area window to place the drawing frame.

Selecting the front view



1. In the **Detailed Planning 3D** menu, click on **Set front view layer**.
2. Move the cursor along a wall.
→ The cursor shows the direction in which the front view is created.

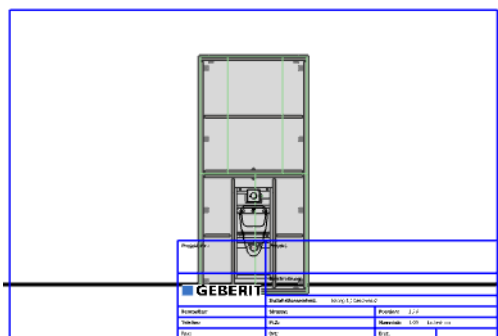


3. Click in the direction of the wall, which you want to see as a front view.
→ The **Front view** tab shows the front view selected.
4. To display or hide the front view layer, click on **Display front view layer** in the **Detailed Planning 3D** menu.

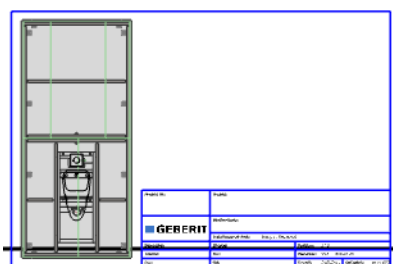


You can adapt the drawing frame to the size of the installation.

1. Select a front view.



2. Right-click in the front view window and select **Adapt drawing frame** in the pop-up menu.



Showing and hiding layers

All parts of the drawing, such as building, objects and texts, are saved as **Layers**. The layers can be shown, hidden and blocked for the plan view, front view and 3D view respectively.



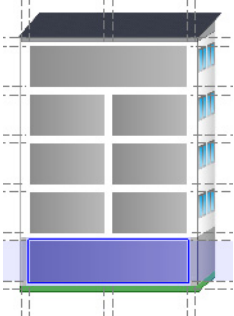
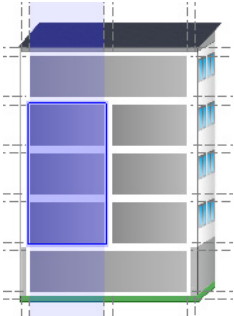
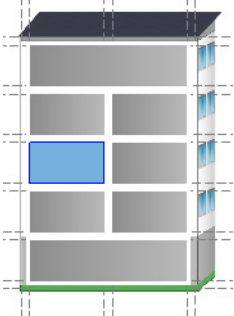
Blocked layers cannot be deleted.



1. In the **Assistants and settings** window click on **Layers**.
→ The **Layers** window appears. The layers are combined in groups and can be enabled and disabled individually or as a group.
2. To show layers, tick the checkboxes in the **Plan view**, **Front view** or **3D view** columns.
3. Deselect the checkboxes to hide layers.
4. To protect layers against changes, tick the checkboxes in the **Blocked** column.
5. Check **Save as default** to apply changed settings as default settings for other subprojects.
6. Click on **Finish** to apply the settings for the subproject.

4.4 Building

A building in ProPlanner consists of floors, stacks and installation units. Building properties (see page 86) that can be changed are specified for each of these building dimensions.

Dimension	Description
<p>Floor</p> 	<p>A differentiation is made between basement, above-ground and attic floors.</p> <p>The basement is highlighted in the underground floor</p>
<p>Stack</p> 	<p>The width of a building is defined by the number of its stacks. One installation unit is added per floor with each stack. Attic floors and underground floors are continuous floors, each consisting of an installation unit.</p> <p>The diagram shows a building with two stacks with the left-hand stack highlighted</p>
<p>Installation unit</p> 	<p>Installation units are connected to each other by means of connections to the risers and stacks. Your pipe and object planning is done in the installation units. Planning is done in the Design Area window.</p> <p>The installation unit in the first upper floor is highlighted in the diagram</p>

Planning principles

Properties that are defined for the entire building are carried over for all floors, stacks and installation units. Any deviating properties can be defined either for a floor or an installation unit.

Plans for an installation unit or stack can be simply copied and then adjusted in ProPlanner.

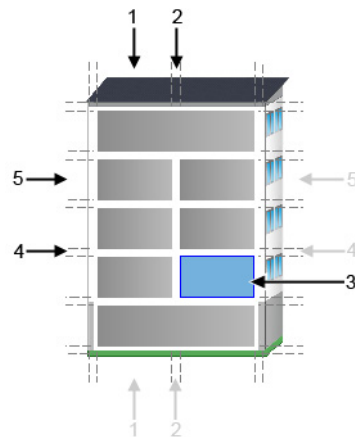
The plan of the installation unit highlighted in the **Building** is shown in the Design Area window.

The view in the **Building** corresponds to the building configuration of the active subproject.

The following elements are also visible in the building alongside the floors, stacks and installation units.

- Building walls and ceilings. These can be highlighted to specifically extend or remove floors and stacks.
- Blue-coloured installation units. An installation has already been planned in a subproject for these installation units.
- Grey installation units. Nothing has, as yet, been planned for these installation units.

The following diagram shows at which position areas are highlighted:



- (1) Area for highlighting a stack
- (2) Area for highlighting a wall
- (3) Area for highlighting an installation unit
- (4) Area for highlighting a ceiling
- (5) Area for highlighting a floor



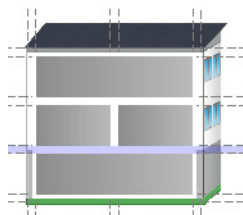
To retain an overview in the building, you can zoom into the building in the Building window by rotating the mouse wheel. Hold down the mouse wheel to move the building. The same zoom functions are available via the right mouse key pop-up window as for the drawing area.

4.4.1 Defining the Building Size

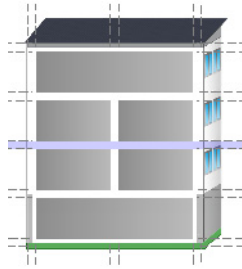
Firstly specify only the installation units, floors and stacks required for your plan, for instance a basement, above-ground floor and attic floor. In a later planning step, you can easily replicate the installation units once they have been defined.

Adding floors

1. In the Building window, highlight the floor ceiling above which you wish to insert a floor ([see page 86](#)).



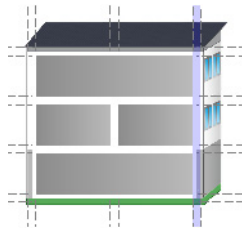
2. Right click in the Building window and select **Add upper floor**.



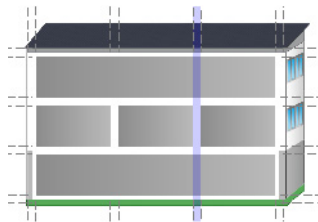
If you have highlighted the ceiling for an underground or attic floor, you can also select the command **Add underground floor** or **Add attic floor**.

Adding stacks

1. In the Building window, highlight the wall to the right of which you wish to insert another stack ([see page 86](#)).



2. Right-click in the Building window and select **Add stack**.



Adapting the height of the floor

1. Highlight the respective floor in the Building window ([see page 86](#)).
2. Right-click next to the desired floor and select **Floor properties**.
3. Change the values and confirm them with **OK**.
 - The settings are applied but the visualisation of the floor does not change.

4.4.2 Multiplying Installation Units

You can determined whether the material for one installation unit is to be calculated once or several times in a calculation.

1. Highlight an installation unit in the Building window.
2. Right-click in the Building window and select **Installation unit properties**.

3. Enter in the **Multiplicity** field how often the material is to be calculated for this installation unit.



4. Confirm with **OK**.

4.4.3 Copying Installation Units

It is possible to copy a planned installation unit. ProPlanner provides the following options for this:

- Copy the installation unit, including the plans contained in it
- Copy the floor with the installation units contained in it
- Copy the above-ground floors of a section with the installation units contained in it. The attic and underground floors are not copied here
- Copy the installation unit, including the plans contained in it, and apply it several times to parts of the building or to the entire building

4.4.3.1 Copying Individual Installation Units

Check the following points before copying an installation unit:

- Have all of the objects and wall needed been correctly placed?
- Are there any error messages in the message list?
- Is the pipework plan complete?
- If necessary, have the corresponding properties for the installation unit been adapted?



During the insertion procedure, existing plans are overwritten. The step cannot be undone.

Copying Individual Installation Units

1. Right click in the Building window in the installation unit you require and select **Copy** in the pop-up menu.
2. Right click in another installation unit and select **Paste** in the pop-up menu.
 - The copied content will be pasted into the selected installation unit.

4.4.3.2 Copying Floors

There are two ways to copy floors:

- Paste the copied floor into an existing floor
- Paste the copied floor into the building as a new floor

Copying and pasting floors is a complex computational process and can take several seconds.



Existing plans are overwritten when pasting a floor plan.

Copying and pasting a floor into an existing floor

1. Right-click near the floor that you wish to copy.



2. Select **Copy** in the right mouse key pop-up menu.
3. Right click on an existing floor and select **Paste** in the pop-up menu.



Copying and pasting a floor as a new floor

1. Right-click near the floor that you wish to copy.



2. Select **Copy** in the right mouse key pop-up menu.
3. Select the floor ceiling above which you wish to paste a new floor.



4. Right click on the selected floor ceiling and select **Paste** in the pop-up menu.



4.4.3.3 Copying Stacks

There are two options for copying stacks:

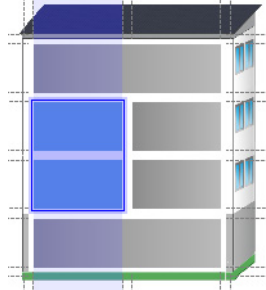
- Insert the copied stack into an existing stack.
- Insert the copied floor as a new stack into the building.



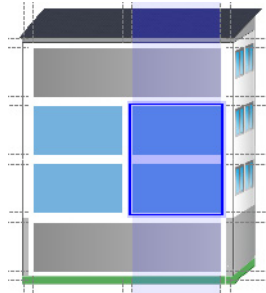
Plans for the underground and attic floors are not taken into account when copying a stack.

Copying and pasting into an existing stack

1. Right-click above or below the stack that you wish to copy.

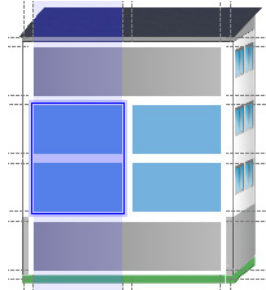


2. Select **Copy** in the right mouse pop-up menu.
3. Right-click on an existing stack and select **Paste** in the pop-up menu.

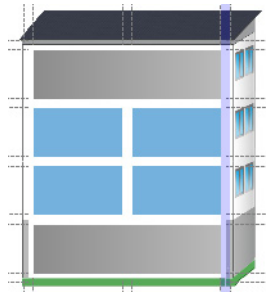


Copying and pasting a stack as a new stack

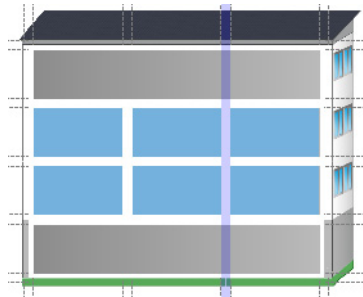
1. Right-click above or below the stack that you wish to copy.



2. Select **Copy** in the right mouse pop-up menu.
3. Highlight the wall to the right of which you wish to add a new stack.



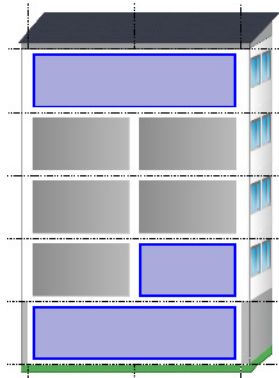
4. Right click on the selected wall and select **Paste** in the pop-up menu.



4.4.3.4 Multiple Pasting of Installation Units

Once you have planned an installation unit, it is possible to copy and paste it into parts of the building or into the entire building.

1. Right click in the Building window in the installation unit you require and select **Copy** in the pop-up menu.
2. Right click in the Building window and select **Multipaste** in the pop-up menu.
→ The **Multipaste** window opens.



3. Select the desired installation units. Hold down **Ctrl** to select several installation units or floors.
4. Confirm your selection by clicking on **Finish**.
→ The copied content will be pasted into all of the selected installation units.

4.5 Removing Installation Units

In the Building window you can:

- Remove plans in the installation units
- Remove sections and floors, including their respective installation units

Delete plans in an installation unit

1. Click on the selected installation unit in the Building window.
2. Click on **Installation unit > Delete content of installation unit** in the **Building** menu.

Deleting plan of floor or removing the floor

1. Highlight the respective floor in the Building window .
2. To delete a floor plan, click in the **Building** menu on **Floor > Delete floor contents**.
3. To remove a floor, click in the **Building** menu on **Floor > Remove floor**.

Deleting the plan of a section or removing a section

1. In the Building window, highlight the section you require.
2. To delete the plan in a section **Building** menu on **Section > Delete section contents**.
3. To remove a section, click in the **Building** menu on **Section > Remove section**.

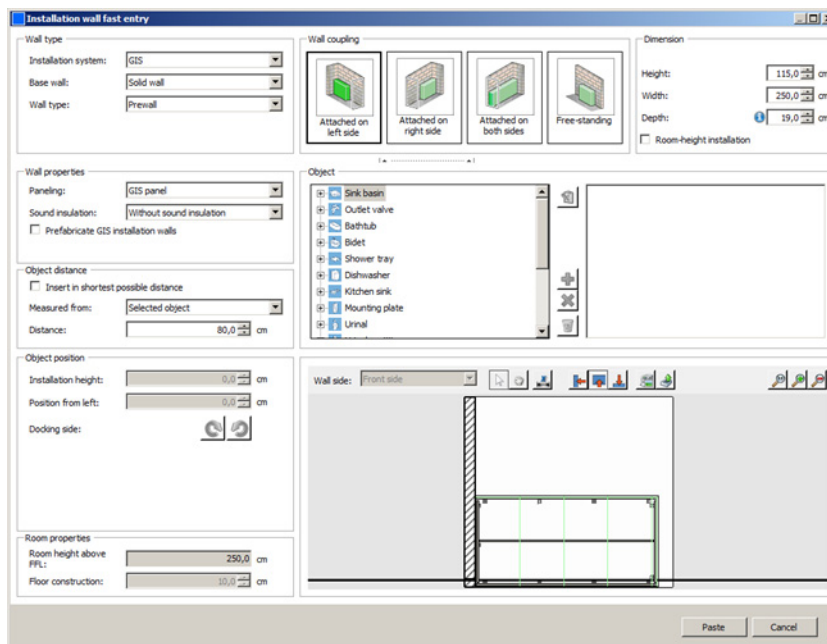
4.6 Installation Wall Fast Entry

You can create an installation wall using Detailed Planning 3D or the Installation wall fast entry. Using the Installation wall fast entry you can plan an installation wall including all objects and then insert it into the drawing area. Proceed in the same way as with the Installation Systems module.


Creating an installation wall



1. Select one of the following options to call up Fast entry:
 - In the **Detailed Planning 3D** menu click on **Installation wall fast entry**.
 - In the Tools window, select the **Wall and installation walls** tab and click on **Installation wall fast entry**.
- The **Installation wall fast entry** window appears:



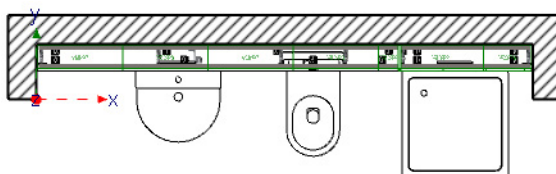
2. Select the Wall type (see page 99).
3. Define the Wall coupling (see page 99) of the installation wall.
4. Select the Dimensions (see page 100) of the wall and, if necessary, of the part wall.
5. Select the Wall properties (see page 100).
6. Select the Object distance (see page 100).
7. Add the Objects (see page 100) required.
8. Position (see page 101) the selected objects and possibly define the installation height and docking side.

9. Specify the Room properties (see page 101) using the **Room height** and the **Height of floor construction**.
10. Check your selection in the preview (see page 101).
11. Click on the  button to enlarge the preview of the wall. The button is located under the **Wall coupling** area.

Inserting installation walls

Once you have placed all the objects on the installation wall, you can insert the wall into the drawing area.

1. Click on **Insert** in the **Installation wall fast entry**.
2. Click on the desired position within the drawing area to place the wall.



4.6.1 Wall Properties

You can define the properties of a wall if you add an installation wall using Fast entry.

Wall type

Specify the following in the **Wall type** area:

- Installation system (Duofix or GIS)
- Base wall (solid wall or lightweight wall)
- Wall type (Prewall or room separator, room-height/part-height combination, corner construction)

The selection of the wall type has a direct effect on the visualisation in the **Wall coupling** area, on the input options in the **Dimension** area and on the visualisation in the preview. Therefore, always define the wall type first.

Wall coupling

The wall coupling depends on:

- The wall type selected (prewall, room separator, room-height/part-height combination and corner construction)
- The selected position (left, right, attached on both sides, free-standing)

The selected wall coupling is displayed in the preview accordingly.




Fig. 4-3 Wall couplings for solid, room-height GIS prewall

Dimensions

Define the following in the **Dimensions** area:

- Height above FFL, width and depth of the selected installation wall in cm
- Height and width of the part wall if you have selected the **Room-height/part-height combination** as the wall type.
Changes to the dimensions result in a respective adaptation of the preview. The dimensions can be shown and hidden in the preview.

You can call up PDF format data sheets containing information on the minimum depths of GIS and Duofix installation walls via the  info symbol. The information depends on the **Wall type** selected.

Wall properties

Select **Panelling**, the **Acoustic insulation** and prefabrication of GIS installation walls in the Wall properties area.

4.6.2 Objects

Once you have added an installation wall via the Fast entry, you can define the distance between objects and the position of the objects. You can select different object types from a list.

Object distance



Specify in the Object distance area at what spacing the new objects are inserted.



- The minimum distance means that a practical minimum distance that can be used is entered in ProPlanner
- Use the entry direction to define whether new objects are inserted from left to right or from right to left.
- Distances are measured from the middle axis of the objects
- You can enter a negative value in the **Distance** field. The object is then positioned on the left

Object selection

The **Object** area contains:

- A list (directory tree) of all available objects (product range)
- A window for the added objects
- Buttons for adding and deleting objects
- The option to display the configuration of an object

Button	Command
	Display object configuration You can adapt the following properties: <ul style="list-style-type: none"> • Object type • Material group • Object size in ceramic appliance data The Article information (see page 78) also appears
	Insert object into the installation wall. The object is shown in the right-hand window and appears in the preview



Button	Command
	Delete checked object from installation wall
	Delete all objects from the installation wall



- By double-clicking on the top layer in the directory tree, you can automatically add the standard element from the object group (bathtub, bidet, washbasin etc.).
- As soon as you hover the cursor over an added object, the description, dimensions and article number of the object are displayed in a screen tip.

Object position

After adding an object, you can adjust the installation height and position in the **Object position** area. The docking side can be determined for certain objects (e. g. bathtub or shower tray).

Field	Function
Installation height	Object height measured from FFL
Position from left	Object distance from the left-hand fixed wall
Docking side	Rotate object  clockwise or  counterclockwise



You can also move the valves of certain objects, such as shower trays or bathtubs, using the arrow keys. To do so, enable the valve in the preview.

4.6.3 Room Properties and Room View

If you add an installation wall via Fast entry, you can enter the dimensions of the room and display the positions of the objects in different views.

Room properties

The **Room-height above FFL** and the **Floor construction** are defined in the Building properties (see page 86).

The room height is the clear height between the finished floor (FFL) and the ceiling.

Preview












The preview provides the option of displaying the wall and objects in various perspectives and dimensions and printing and exporting them. If a partition wall (room separator) is selected as the wall type, the front and rear side can be displayed in the view. Objects are mounted on the wall side of the partition wall currently selected in the preview.

The height of the floor construction is indicated in the preview by a black line.

If the wall dimensions or the position of an object have to be adjusted, the object appears red. A screen tip (Quick Info) provides information about the error that can be automatically corrected.

Installation Walls from Installation Systems

The buttons in the preview offer the following functionalities:

Button	Command
	Select and position. Use the arrow keys for positioning in cm. Use the arrow keys while simultaneously pressing Ctrl when positioning in mm.
	Navigation. The drawing area can be moved in Navigation mode. Use the arrow keys for this
	Display dimension lines You can move the dimension lines with your mouse
	Side view
	Front view
	Plan view
	Print. The preview can be printed directly. Possible settings depend on the printer used
	Graphics export. The preview can be exported in various formats (e. g. TIFF or JPG). The graphics can be exported in DXF and DWG formats for CAD drawings. The resolution, height and width can be selected for certain formats
	Display all. Set view to 100 %
	Zoom in
	Zoom out

4.7 Installation Walls from Installation Systems

You can import and edit installation walls that you have planned in the Installation Systems module in a subproject in the Detailed Planning 3D module. You must carry over one or more subprojects from the Installation Systems to the Detailed Planning 3D module before you can import an installation wall.

Importing Installation Systems subproject



1. Click on **Import subprojects** in the **File** menu.
2. Click on **Add** and select a Installation Systems project in the **Import subprojects** window.
→ All of the subprojects in a project are displayed in the **Included subprojects** area.
3. Select one or more subprojects and click on **Import**.
→ The selected subprojects will be displayed in the Project window.

Import installation walls from Installation Systems

Requirements:

The Detailed Planning 3D module contains subprojects from the Installation Systems module.

1. Click on **Import installation walls from Installation Systems** in the **Detailed Planning 3D** menu.
2. Select a **subproject** in the **Import from installation systems** window.
 - The installation walls of the selected subproject are displayed in the Tools window in the **Import installation walls from installation systems**.
3. Select a **position** from the bill of quantities from the selected **subproject**.
 - The installation walls of the selected position are displayed.
4. Click on an installation wall and place it by clicking in the Design Area window.
 - The installation wall is deleted from the display in the Tools window.

4.8 Imported Plans

You can import and edit different image files (for example, AutoCAD DXF/DWG, SVG, JPEG) in the Detailed Planning 3D module. The imported data is saved with the ProPlanner file.

4.8.1 Importing Plans

First import an image file and define a drawing scale with vector drawings (AutoCAD DXF/DWG, SVG). The imported plan can then be edited and fixed.

Reading image files



1. Click on **Import background plan** in the **Detailed Planning 3D** menu.
2. Select the **File type** and the chosen file in the **Select drawing file** window.
3. Click on **Open**.
 - The data is imported and displayed in the drawing area. Use your cursor to move the imported plan in the drawing area.
4. Click in the drawing area to place the imported plan where you wish it to be.

Fixing the drawing scale

1. Right-click on the imported plan and select **Obtain distance** in the pop-up menu.
2. Click in the drawing area and highlight the start point and end point of a section, the length of which you know.
 - The **Properties of background plan** window appears.
3. Enter the actual length of the section measured in the **New distance** field.
4. Confirm with **OK**.



- The current section length is shown while the distance is measured.
- You can zoom in with the mouse wheel to get a better detailed view

4.8.2 Editing Imported Plans

Imported image files can be edited. The image editing options depend on the imported image format.

Displaying and hiding CAD layers

With AutoCAD files (DXF/DWG), you can display or hide individual layers after importing them into ProPlanner.

1. Right-click on the CAD plan and select **Properties** in the pop-up menu.
2. Select or de-select the checkboxes in the **Visible layers** area in the **Background image properties** window.
3. Confirm with **OK**.

Release areas

You can release areas to select cut-out sections for the imported plan with vector drawings (AutoCAD DXF/DWG, SVG).

1. Right-click on the imported plan and select **Release area** in the pop-up menu.
2. Holding the left mouse key down, drag open an area and click into the Design Area window.
 - The imported plan is deleted outside of this area.

Resizing

1. Right-click on the imported plan and select **Properties** in the pop-up menu.
 - The **Properties of background plan** window appears.
2. Click on **Measure distance**.
 - The **Properties of background plan** window disappears.
3. Click on a start point in the Design Area window and move the cursor into the required direction.
4. Click again into the Design Area window to specify an end point.
 - The **Properties of background plan** window appears.
5. Enter the required length in the **New distance** field.
6. Click on **OK** to apply the setting.



Rotating imported plan

1. Right-click on the background plan and select **Rotate background plan** in the pop-up menu.
2. Click on a point in the Design Area window around which you wish to rotate the imported plan.
3. Rotate the imported plan to the position you require and then click again in the Design Area window.
4. In the fast entry bar, select **Angle** to rotate the imported plan step by step by a selected angle.

4.8.3 Fixing Imported Plans

It is recommended that the background plan is fixed to create a plan based on the imported data. You will then be able to draw objects in the Design Area window without the background plan changing position.



1. Place the background plan at the required position in the Design Area window.
2. Click on **Layers** in the **Detailed Planning 3D** menu.
3. Tick the checkbox in the **Blocked** column to enable the **Imported plan**.
4. Click on **Finish**.
 - The plan imported has been fixed. It is no longer possible to change the size, move or edit the plan.

4.9 Reference Points

Reference points can be placed in the Design Area window of the Detailed Planning 3D module that can be used to align objects and walls. You can assign reference points manually or automatically. Reference points are automatically assigned by default in ProPlanner.

The reference point is highlighted by a red point and two axes.



Fig. 4-4 Reference point with a system axis

Opening the Reference point window

The coordinates (x, y, z) are displayed in the **Reference point** window. You can determine the current position of a highlighted object in the Design Area window using these coordinates. The position of the cursor is shown if no object has been highlighted. The reference point coordinates are (0, 0, 0).

- Click on **Window** in the **View** menu and select **Reference point**.
 - The window opens on the right-hand side of the user interface.

Assigning reference point automatically

The reference point is placed at the nearest object depending on the enabled object.

Requirements:

A wall has been placed in the Design Area window.



1. Select the **Assign reference point automatically** function.
2. Select an object in the **Tools** window.
3. Move to the drawing area in the **Design Area** window and set the object on the wall.
 - The system axis is placed on the closest object (wall, object, etc.).

Example

The following figure shows the position of a washbasin on a GIS installation wall with the corresponding coordinates.

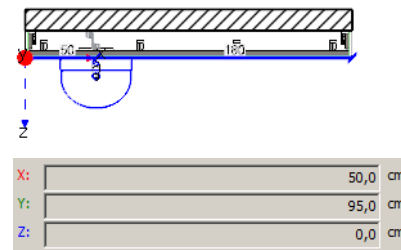


Fig. 4-5 Object with corresponding coordinates

The washbasin is located (relative to reference point):

- 50.0 cm in the x direction
- 95.0 cm in the y-direction (height above FFL)
- 0 cm in the z direction

The reference point of the washbasin for the coordinates is located in the centre of the object, at the point of contact with the GIS installation wall (indicated in red):

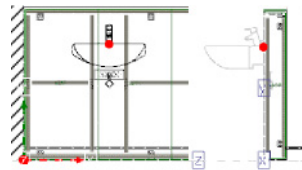


Fig. 4-6 Front view and side view

Manually assigning a reference point

Should you wish to place a reference point manually, you must be aware of the positions of the axes when positioning an object. Under certain circumstances you may have to work with minus numbers with the coordinates.

1. Create a plan (wall, objects, etc.) in the Design Area window.
2. Click on **Set reference point** in the **Detailed Planning 3D** menu.
→ The cursor changes to **Set reference point** mode.
3. Click on the required position in the Design Area window.
→ The reference point is set and the system axis appears.
4. Should you wish to specify the alignment of the axes, click in the direction of the axis you require.





Capture mode is enabled when you set a reference point manually. If the cursor is near an object, it automatically moves to a capture point (object edge, object centre, etc.). You can switch off Capture mode with **Ctrl**.

4.10 Placing and Adapting Walls

Use the **Walls and installation walls** tab in the Tools window ([see page 74](#)) to draw rooms for your installation. Change the properties of individual walls in the Design Area window using the pop-up menu opened with the right mouse key.

The following drawing modes are available for solid walls and lightweight walls.

Drawing mode	Function
	Left The outside dimensions of the solid wall or lightweight wall are drawn
	Right The inside dimensions of the solid wall or lightweight wall are drawn

4.10.1 Drawing Rooms and Walls

You can draw rooms and walls using the **Walls and installation walls** tab in the Tools window. Walls are drawn in relation to a reference point ([see page 105](#)).

Drawing rectangular rooms

1. Select the **Walls** tab and highlight the **Room**.



→ The cursor changes to **Room drawing** mode.

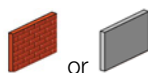


2. Highlight a point in the Design Area window as the top left corner of the room.
3. Adjust the dimensions of the room in the **Room (solid construction)** window.
4. Deselect **Inside dimensions** if the dimensions are to be outside dimensions.
5. Confirm the settings with **OK**.
→ The room is displayed with black hatching.

Drawing walls manually



1. Select the Assign reference point automatically function ([see page 105](#)).
2. Select the **Walls** tab.
3. Select **Left** or **Right** as the **Drawing mode**. With **Left**, you draw the outside dimensions of the wall and, with **Right** you draw the inside dimensions of the wall.
4. Highlight the **Solid wall** or the **Lightweight wall**.

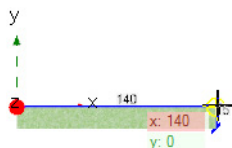


→ The cursor changes to **Draw wall** mode.

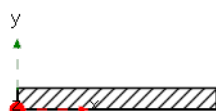


5. Adjust the wall thickness in the **Depth** field.
6. Click on a position in the Design Area window to define a starting point.

7. Drag the wall to the width you require.



8. Press the **Tab** key to select the Coordinates field (see page 108).
9. Click on the end point in the Design Area window.
10. Press **Esc** to exit wall drawing mode.
→ The wall is displayed with black hatching.



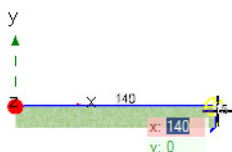
Drawing walls with the coordinates field

Requirements:

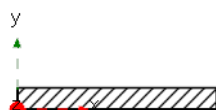
The drawing mode and either Solid wall or Lightweight wall have been selected.



1. Select the Assign reference point automatically function (see page 105).
2. Click on a position in the Design Area window to define a starting point.
3. Press the **Tab** key to select the Coordinates field.



4. Enter the coordinates of the end point of the wall. Use the **Tab** key to move between the coordinates.
5. Press **Enter**.
→ The wall is drawn with the selected dimensions.
6. Press **Esc** to exit wall drawing mode.
→ The wall is displayed with black hatching.



When drawing the wall using the Coordinates field, the height (y axis) is measured from the unfinished floor level (UFFL).

Drawing walls using the fast entry bar

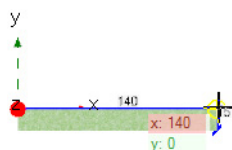
Requirements:

The drawing mode and either Solid wall or Lightweight wall have been selected.

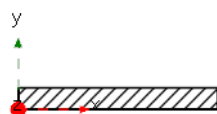


1. Select the Assign reference point automatically function (see page 105).
2. In the Fast entry bar, select **Distance** to draw every wall section with the specified width.
3. Click on a position in the Design Area window to define a starting point.

4. Drag the wall.
→ The wall is drawn with the selected width.



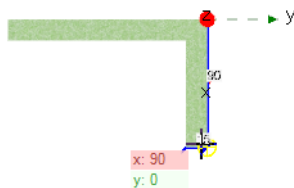
5. Click on the end point in the Design Area window.
6. Press **Esc** to exit wall drawing mode.
→ The wall is displayed with black hatching.



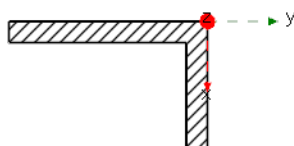
Drawing walls with a corner

Requirements:
A wall has been drawn.

1. To draw in a change of direction, click on the end of the drawn wall and create a corner point.
Drag the wall in the direction you require.





2. In the fast entry bar, select **Angle** to draw every wall section with the specified angle (or a multiple).
3. Click to define an end point.
4. Press **Esc** to exit wall drawing mode.
→ If the wall is made up of one or two sections, the wall is displayed with black hatching.




If the wall is made up of more than two sections, a room completion has to be selected.

Selecting room completions

If the wall is made up of more than two wall sections, the **Room completion** window appears when the Wall drawing mode is exited. You may choose whether or not and also how the walls are to be connected to create a room.

Button	Function
	Close at the point of intersection: A rectangular room is drawn
	Join starting point and end point: A room with an angled wall is drawn

Button	Function
	Leave open: The wall ends are not connected
Cancel	If you end Wall drawing mode, the wall that has been drawn is deleted

- ▶ Select a room completion.
 - ➔ The run of the wall is adapted and is displayed with black hatching.

4.10.2 Moving, Adjusting and Deleting Walls

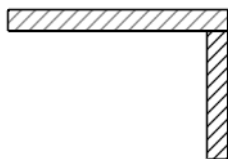
Once you have drawn a wall in the Design Area window, you can move it and adapt the properties of the wall (width, depth etc.) and its sides.

Moving a wall

Requirements:

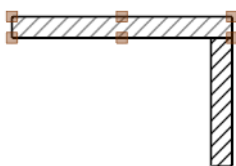
A wall has been placed in the Design Area window.

1. Click on a wall.
 - ➔ The wall is shown in grey.



2. Click on **Move objects** in the **Detailed Planning 3D** menu.

3. Select a reference point.
4. Move the wall with the mouse or the arrow keys.



5. Click onto the point at which a wall is to be added.

Adjusting the properties of a wall

Requirements:

A wall has been placed in the Design Area window.

1. Highlight a wall.
2. Right click on the wall and select **Properties** in the pop-up menu.
3. Make the changes to the wall in the Properties window.
4. Save your changes with **Apply**.
 - ➔ The changes are shown in the Design Area window.
5. Confirm the changes with **OK**.

Adjusting the properties of a wall side

Requirements:

A wall has been placed in the Design Area window.

1. Right-click on a wall side or wall edge and select **Properties** in the pop-up menu.
2. Make the changes to the wall side in the Properties window.
3. Save your changes with **Apply**.
→ The changes are shown in the Design Area window.
4. Confirm the changes with **OK**.

Deleting a wall

1. Highlight a wall.
2. Press **Del**.

4.10.3 Inserting, Adapting and Deleting Wall/Floor Openings

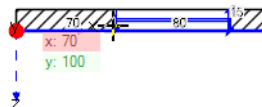
You can plan windows and doors with standard dimensions or individually select the **Dimensions**.

Adding windows and doors

Requirements:

The **Walls and installation walls** tab is selected in the Tools window.

1. Select the **Wall** tab and highlight a wall/floor opening (standard door or standard window).
2. To define individual **Dimensions**, select the **Height** and **Width** of the wall/floor opening.
3. Move the cursor along a wall in the Design Area window.
→ The wall/floor opening is displayed.



4. Select one of the following options to place a wall/floor opening:
 - Move the wall/floor opening with your mouse and click on the point at which you wish to insert the wall/floor opening.
 - Press the **Tab key** and enter the required values in the Coordinates field. Confirm with the **Enter key**.
 - Enter a value as the distance to the reference point in the **Distance** field in the Fast entry bar. Confirm with the **Enter key**.
- The wall/floor opening is inserted.

Adjusting properties of windows and doors

You can adjust the height and the width or specify the opening angle for doors.

1. Highlight a wall/floor opening in the Design Area window.
2. Right-click on the wall/floor opening and select **Properties** in the pop-up menu.
3. Make the changes in the Properties window.
4. Save your changes with **Apply**.
→ The changes are shown in the Design Area window.
5. Confirm the changes with **OK**.

Placing and Adapting Installation Walls

Defining the hinge side and opening direction for doors

You can define whether a door is hinged on the left or right and whether a door opens inwards or outwards.

1. Highlight a door in the Design Area window.
2. Right-click on the door.
3. Select **Change hinge side** in the pop-up menu to change the side of the door hinge.
4. Select **Change opening direction** in the pop-up menu to change the opening direction of the door hinge.

Deleting windows and doors






1. Highlight a wall/floor opening
2. Press **Del**.

4.11 Placing and Adapting Installation Walls

You can plan GIS or Duofix installation walls in ProPlanner. To be able to select the required type, select the **Walls and installation walls** tab in the Tools window.


Overview of installation wall types



Various types of walls are available, depending on the system selected (Duofix or GIS):

Wall type	Property
	Room-height or part-height prewalls for mounting alongside a wall
	Room-height or part-height room separator for mounting on the face of a wall
	Room-height or part-height free-standing partition
	Room-height or part-height corner wall
	Duct insert for duct planning (see page 118): You can provide pipes for water supply connections, heating, ventilation and electrical installations etc.

Selecting the drawing mode

Three different drawing modes are available for designing installation walls:

Drawing mode	Function
	Free For manual drawing (draft or traverse) along a wall (solid or lightweight wall) The depth of the installation wall is carried over from the settings in the Tools window

Drawing mode	Function
	Auto Adjusts the installation wall to a highlighted wall (solid or lightweight wall)
	Simple Places the installation wall as a pre-dimensioned unit with the settings entered for height, depth and width in the Tools window

4.11.1 Drawing Installation Walls

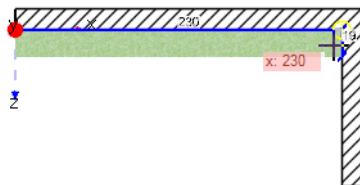
You have the option of drawing installation walls manually or automatically. You can also define the dimensions of a wall before inserting it into your drawing.

Drawing installation walls manually

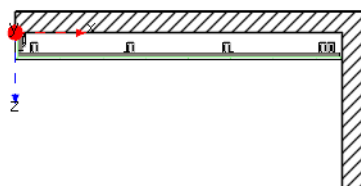
Requirements:

- A room, a solid wall or a lightweight wall has been placed in the Design Area window
- The **Walls and installation walls** tab is selected in the Tools window.

1. Select the **GIS** or **Duofix** tab.
2. Highlight a type of wall.
3. Select the **Free** drawing mode.
4. Click into the Design Area window to define a start point.
5. Drag the installation wall to the width you require.



6. Click again into the Design Area window to set an end point.
7. Press **Esc** twice to exit Drawing mode.
→ The installation wall is displayed.



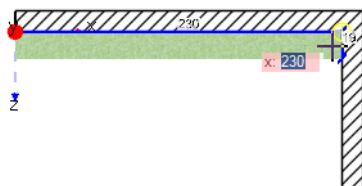
Drawing installation walls with the coordinates field

Requirements:

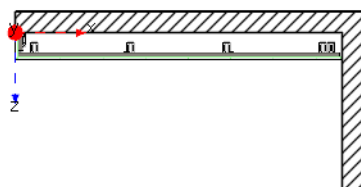
- A room, a solid wall or a lightweight wall has been placed in the Design Area window
- The **Walls and installation walls** tab is selected in the Tools window.
- A wall type is highlighted in the **GIS** or **Duofix** tab and the **Free** drawing mode is selected.

Placing and Adapting Installation Walls

1. Click into the Design Area window to define a start point.
2. Press the **Tab** key to select the Coordinates field.



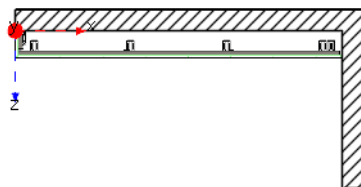
3. Enter the width you require.
4. Press **Enter**.
→ The wall is drawn with the selected width.
5. Press **Esc** twice to exit Drawing mode.
→ The installation wall is displayed.



Drawing installation walls with the fast entry bar

Requirements:

- A room, a solid wall or a lightweight wall has been placed in the Design Area window
 - The **Walls and installation walls** tab is selected in the Tools window.
 - A wall type is highlighted in the **GIS** or **Duofix** tab and the **Free** drawing mode is selected.
1. Select **Distance** in the Fast entry bar and enter a value to draw all installation walls with the specified width.
 2. Click into the Design Area window to define a start point.
→ The wall is drawn with the selected width.
 3. Click on the end point in the Design Area window.
 4. Press **Esc** twice to exit Drawing mode.
→ The installation wall is displayed.



Drawing installation walls automatically

Requirements:


- A room, a solid wall or a lightweight wall has been placed in the Design Area window
 - The **Walls and installation walls** tab is selected in the Tools window.
1. Select the **GIS** or **Duofix** tab.
 2. Highlight a type of wall.
 3. Select **Auto** drawing mode.
 4. Place the installation wall on the solid wall or lightweight wall.
→ The installation wall is adjusted to the width of the solid wall or lightweight wall.

Pre-dimensioning installation walls

Requirements:

- A room, a solid wall or a lightweight wall has been placed in the Design Area window
 - The **Walls and installation walls** tab is selected in the Tools window.
1. Select the **GIS** or **Duofix** tab.
 2. Highlight a type of wall.
 3. Select the **Simple** drawing mode.
 4. Enter the **Height above FFL** (only with part-height walls), **Depth** and **Width** of the wall.
 5. Place the installation wall on the solid wall or lightweight wall.
 - The installation wall is inserted with the previously entered width and depth.



You can call up PDF format data sheets containing information on the minimum depths of GIS and Duofix installation walls via the  info symbol. The information depends on the **Wall type** selected.

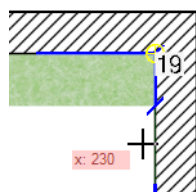
4.11.2 Drawing Installation Walls Around Corners

You can draw GIS installation walls around corners. With Duofix installation walls, the wall coupling is generated in ProPlanner as soon as two installation walls are at right angles to each other.

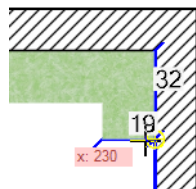
Drawing GIS installation walls around corners

Requirements:

- A room, a solid wall or a lightweight wall has been set in the Design Area window
 - The **Walls and installation walls** tab is selected in the Tools window.
 - A wall type is highlighted in the **GIS** or **Duofix** tab and the **Free** drawing mode is selected.
1. Click in the Design Area window to define a start point and drag the installation wall to the corner.
 2. Drag your mouse a little way in the direction in which the installation wall is to run after the change of direction.

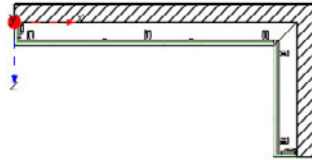


3. Click into the Design Area window to define the change of direction.



4. Select **Angle** in the fast entry bar and enter a value to define the angle for all changes of direction.
5. Drag the installation wall and click to define an end point.

6. Press **Esc** twice to exit Drawing mode.
→ The installation wall is displayed.

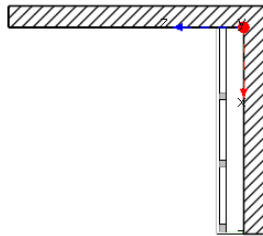


Drawing Duofix installation walls around corners

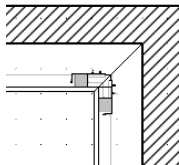
Requirements:

- A room, a solid wall or a lightweight wall has been placed in the Design Area window
- The **Walls and installation walls** tab is selected in the Tools window.
- The **Duofix** tab is selected.

1. Select the room-height prewall and **Auto** drawing mode.
2. Set the prewall on the inside or outside side of the masonry.



3. Repeat step 1 and set a further prewall at right angles to the masonry.
→ Both prewalls are automatically connected to each other at the corner.



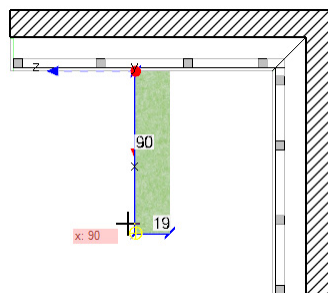
Drawing partition walls around corners

As soon as you have set a partition wall at a prewall in the Duofix product range, the right-angled wall couplings are automatically created in ProPlanner.

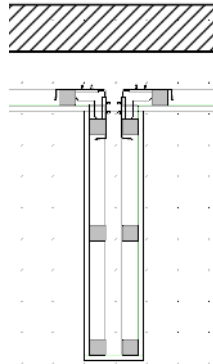
Requirements:

- A prewall has been placed in the Design Area window.
- The **Walls and installation walls** tab is selected in the Tools window.
- The **Duofix** tab is selected.

1. Select the room-height room separator and **Free** drawing mode.
2. Click in the Design Area window on the prewall and drag the partition wall to the required length.



3. Click again into the Design Area window to place the partition wall.
→ The prewall and the partition wall are automatically connected to each other.

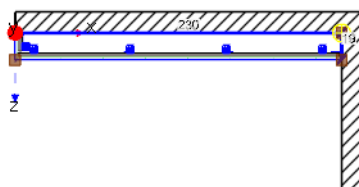


4.11.3 Moving, Adjusting and Deleting Installation Walls

If you have drawn an installation wall, you can move it and adjust the properties (height, depth etc.) of the wall.

Moving installation walls

1. Highlight an installation wall.
2. Click on **Move objects** in the **Detailed Planning 3D** menu.
3. Select a reference point.
4. Move the installation wall with your mouse or the arrow keys.



5. Click on the point at which the installation wall is to be added.

Adjusting the properties of an installation wall

1. Right-click on the installation wall and select **Properties** in the pop-up menu.
2. Make the changes to the installation wall in the Properties window.
3. Save your changes with **Apply**.
→ The changes are shown in the Design Area window.
4. Confirm the changes with **OK**.

Deleting installation walls

1. Highlight an installation wall.
2. Press **Del**.

4.11.4 Duct Planning

You can create a duct plan for installation walls. Place holders for pipes are inserted into the duct plan to plan water supply connections, heating, ventilation and electrical installations. The pipes required are not calculated and do not appear on the material list.

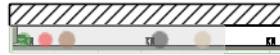


Fig. 4-7 Duct plan in the plan view

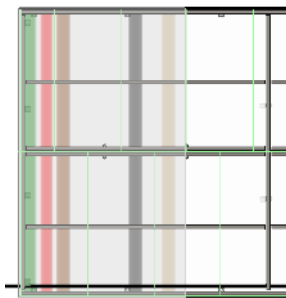


Fig. 4-8 Duct plan in the front view

4.11.4.1 Drawing Ducts

You can draw a duct manually or automatically. You can also show a coordinates field when drawing manually. You can change the size of the duct after drawing.

Drawing ducts manually

Requirements:

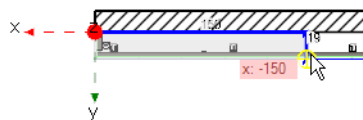
- The **Walls and installation walls** tab is selected in the Tools window.
- A room height GIS or Duofix wall is placed in the Design Area window
- A part-height GIS wall with a duct insert exists

1. Select the **Duct** tab.

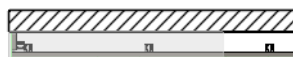


2. Highlight the **Duct** and select the **Free** drawing mode.

3. Click in the Design Area window on the installation wall and drag the duct to the required size.
→ Blue preview dimension lines indicate the dimensions of the duct.



4. Click again into the Design Area window to place the duct on the installation wall.



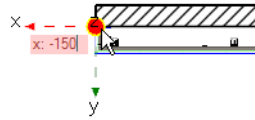
5. Press **Esc** to exit drawing mode.

Drawing a duct with a coordinates field

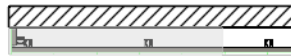
Requirements:

- The **Walls and installation walls** tab is selected in the Tools window.
- A room height GIS or Duofix wall is placed in the Design Area window
- A part-height GIS wall with a duct insert exists

1. Select the **Duct** tab.
2. Highlight the **Duct** and select the **Free** drawing mode.
3. Click on the installation wall in the Design Area window.
4. Press the **Tab** key to enable the coordinates field.
5. Enter the width you require.



6. Press **Enter**.
→ The duct is drawn with the selected width.



7. Press **Esc** to exit the drawing mode.

Drawing ducts automatically

Requirements:

- The **Walls and installation walls** tab is selected in the Tools window.
- A room height GIS or Duofix wall is placed in the Design Area window
- A part-height GIS wall with a duct insert exists

1. Select the **Duct** tab.
2. Highlight the **Duct** and select the **Auto** drawing mode.
3. Click on the installation wall in the Design Area window to place the duct along the total width of the wall.
4. Press **Esc** to exit the drawing mode.

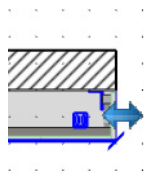


In the German market you can right-click on the properties of the duct and select the FSH 90 ceiling filler system as fire protection.

Changing the duct size

Requirements:

- A duct has been drawn
1. Highlight the duct in the Design Area window.
 2. Right-click on the duct and select **Resize** in the pop-up menu.



3. Press and hold down your mouse to move a duct wall.
4. Press and hold down **Ctrl** to move the duct size one millimetre at a time.

4.11.4.2 Setting and Adapting Place Holders

You can set place holders for water supply pipes or electrical installations in a duct. You can then move these place holders.

Setting place holders

Requirements:

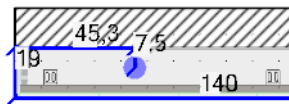
- The **Walls and installation walls** tab is selected in the Tools window.
- A duct has been drawn



1. Highlight **Place holder** in the **Duct** tab.
2. Define the **Properties** of the place holder, for instance **Pipe type** and **Outside diameter (d)**.
3. Select one of the following options to set a place holder:
 - Set place holder freely
 - Set place holder at a specified distance to other place holders and duct frames
4. If you wish to set the place holder at a specified distance, define the **Distance to the duct frame** and the distance to the next place holder.
5. Click on the duct in the Design Area window to set the **Place holder**.
6. Repeat steps 2 - 4, to set further place holders.
7. Press **Esc** to exit the place holder mode.

Moving place holders

1. Highlight a place holder in the Design Area window.
2. Press the **arrow keys**, to move the place holder in a horizontal or vertical direction on the duct.
 - The position of the place holder is displayed when it is being moved.



You can move the place holder one centimetre at a time using the arrow keys. Press and hold down **Ctrl** to move the place holder one millimetre at a time.

Changing place holder properties

You can change the properties of place holders that have already been set.

1. Highlight a place holder in the Design Area window.
2. Right-click on the place holder and select **Properties** in the pop-up menu.
 - The **Place holder properties** window appears.
3. Change the properties of the place holder and confirm with **OK**.

Deleting place holders

1. Highlight the place holder in the Design Area window.
2. Press **Del**.

4.12 Setting and Adapting Objects

Sanitary objects, like bathtubs, washbasins or WCs are available in the Tools window in the **Objects** tab to plan your installations. You can save favorites to quickly replicate individual building situations in different subprojects.

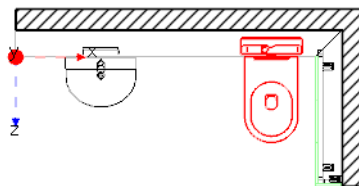
4.12.1 Setting and Correcting Objects

As soon as you have drawn a wall in the Design Area window, you can insert sanitary objects in your drawing using the **Objects** tab in the Tools window. Objects are placed in relation to a reference point (see page 105).

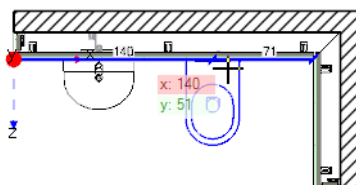
Placing objects manually



1. Select the Assign reference point automatically function (see page 105).
2. Highlight an object.
3. Move the cursor along a wall in the Design Area window.
 - The object is displayed and placed on the wall. ProPlanner checks whether the object can be installed. The object is shown in red if it cannot be installed.



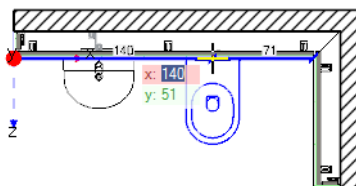
4. Move the object with your mouse and click on the position at which you wish to insert the object.



Placing objects using the coordinates field



1. Select the Assign reference point automatically function (see page 105).
2. Highlight an object.
3. Move the cursor along a wall in the Design Area window.
4. Press the **Tab** key and enter the required position in the Coordinates field. Confirm with the **Enter** key.



5. The object is placed at the selected position.

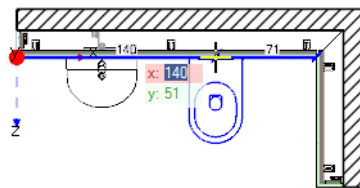


When placing the object using the Coordinates field, the height (y axis) is measured from the unfinished floor level (UFFL).

Placing objects using the fast entry bar



1. Select the Assign reference point automatically function ([see page 105](#)).
2. Select **Distance** in the Fast entry bar and enter the distance of the object to the reference point.
3. Highlight an object.
4. Move the cursor along a wall in the Design Area window.
 - The object is positioned at the selected distance from the wall.



5. Click to paste the object into the drawing.

Correcting objects

Objects that cannot be installed, for example because they intersect a wall, are shown in red in the Design Area window.

1. Hover over the object with your cursor.
 - A screen tip appears with the error message.
2. Select **Correct**.
 - ProPlanner corrects the error and the objects is shown in black.

4.12.2 Highlighting and Moving Objects

First highlight objects if you wish to move or delete them:

Highlighting individual objects

You can select individual objects in plan view and front view using a Quick Info in the Detailed Planning 3D module.

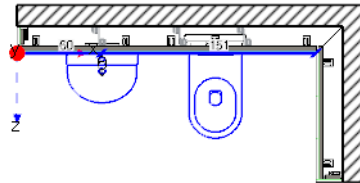
1. Hover with your mouse over any item in the drawing.
2. Press the **Space bar**.
 - All objects located in the area underneath the cursor will be displayed in a Quick Info.



3. Click on an entry to select the object you require.
 - The object appears blue in the drawing.

Highlight several objects

1. Select one of the following options to highlight several objects:
 - Click on the Design Area window and, holding the mouse key down, drag a frame around the objects that you wish to highlight.
 - Press **Ctrl** and click in turn on the objects that you wish to highlight.
 - Simultaneously press **Ctrl + A** to highlight all the objects.



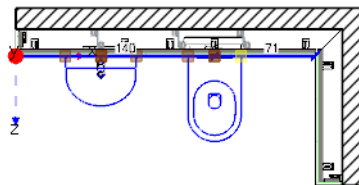
2. To cancel the highlighting of an element, click on a free position in the Design Area window.

Move objects

1. Highlight an object.



2. Click on **Move objects** in the **Detailed Planning 3D** menu.
 - Reference points will become visible on the object. Objects are always moved with reference to a base point.



3. Select a reference point.
4. Move the object with your mouse.
5. Click onto the point at which the object is to be added.



You can move the object one centimetre at a time using the arrow keys. Press and hold down **Ctrl** to move the object one millimetre at a time.

4.12.3 Adapting Objects

You can adapt individual installation parameters as soon as you have placed objects.

Adjusting the installation height

1. Highlight an object in the Design Area window and select **Installation height** in the right mouse key pop-up menu.
2. Enter the required installation height in the **Installation height** window and click on **Apply**.
3. Click on **OK** to close the window.

Selecting the docking side

With shower and bathtub objects, you can select which side of the object lies against the installation wall.

1. Highlight an object and check **Rotate** in the right mouse key pop-up menu.
2. Select whether the object is to be turned **clockwise** or **counterclockwise**.
 - The object will now be turned around 90°.

Selecting the tap position

You can select the valve position with the shower and bathtub objects.

1. Highlight an object and select **Valve position** in the right mouse key pop-up menu.
2. Select the **Coordinates** for the valve and click on **Apply**.
3. Click on **OK** to close the window.

Adding mounting plates

You can add mounting plates for support handles or similar to individual objects (e. g. shower trays).

- Highlight an object and select **Add mounting plate(s)** in the right mouse key pop-up menu. The following functions are available to you:

Command	Function
Left (common profile or two profiles)	Mounting plate is placed to the left of the object
Right (common profile or two profiles)	Mounting plate is placed to the right of the object
On both sides (common profile or two profiles)	Mounting plates are placed to left and right of the object



All mounting plates can be installed without dimensional limits in the room-high Duofix and GIS installation walls.

4.12.4 Copying, Pasting and Deleting Objects

Copying and pasting objects

1. Highlight one or more objects that you would like to copy.
2. Click on **Copy** in the **Edit** menu.
3. Select **Paste** from the **Edit** menu.
- +
4. Move the cursor along a wall in the Design Area window.
5. Click to paste the object at the position you require.



Objects copied from GIS walls cannot be added to Duofix walls and vice versa.

Deleting objects

1. Highlight an object.
2. Press **Del**.

4.12.5 Positioning Objects

You can position objects and enter fixed defined distances using the Move objects ([see page 123](#)) function. Proceed as follows if you wish to maintain minimum object distances, or wish to place the objects centrally (same distance to objects on the left and right):

Requirements:

An installation wall with objects is placed in the Design Area window.

- Highlight the object and select **Positioning** in the right mouse key pop-up menu.
The following functions are available to you:

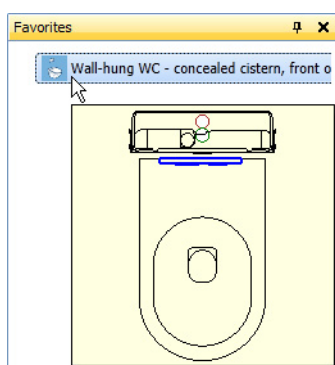
Command	Function
Centred	The object is placed centrally between the left and the right object (alternatively to the wall). A measurement is taken between the central axes of the objects
At the smallest possible distance to the previous object on the left (common profile or two profiles)	The smallest permissible distance is produced between the two objects
At the smallest possible distance to the next object (common profile or two profiles)	The smallest permissible distance is produced between the two objects

4.12.6 Favorites

You can save objects, assemblies and texts as Favorites and call them up quickly via the Favorites window. You can use Favorites like objects and place them in the Design Area window ([see page 121](#)).

Adding an object to favorites

1. Highlight an object in the Design Area window.
2. Right-click on the object and select **Add to favorites** in the pop-up menu.
3. Open the Favorites window.
 - The object appears with the symbol and object type designation.
4. Move the mouse onto the object in the Favorites window.
 - The object appears in a quick view.





Favorites are available across all subprojects within a market. If you create Favorites in a Detailed Planning 3D subproject, you can also use these Favorites in other Detailed Planning 3D subprojects.

Creating a Favorites folder

You can file your favorites in folders to make the Favorites list clearer.

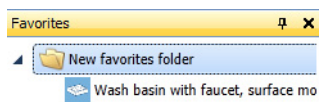


1. Right-click in the Favorites window and select **New favorites folder** in the pop-up menu.
→ The Favorites folder appears in the Favorites window.

2. Highlight the Favorites folder.



3. Right-click on an object in the Design Area window and select **Add to favorites** in the pop-up menu.
→ The object appear in the Favorites folder.



4. Highlight the Favorites folder.



5. Right-click on the Favorites folder and select **Collapse** to close the folder.



6. Right-click on the Favorites folder and select **Expand** to open the folder.



You can also use the arrow key **▲** to minimise and maximise the Favorites folder.

Renaming favorites

You can rename objects and the Favorites folder.

1. Highlight an object or a Favorites folder in the Favorites window.



2. Right-click on the favorite and select **Rename** in the pop-up menu.
3. Enter a name for the Favourite.
4. Press **Enter** to confirm the name.

Exporting favorites

You can export favorites to exchange favorites between different ProPlanner installations. You can then file the favorites at a central place and access them from different locations.



Favorites can only be exported between subprojects of the same type within one market, from one ProPlanner installation and imported into another ProPlanner installation.

1. Highlight an object or a Favorites folder in the Favorites window.



2. Right-click on the favorite and select **Export** in the pop-up menu.
3. Enter a file name and select a storage location in the **Save As** window.
4. Click on **Save** and confirm the information window with **OK**.
→ A Favorites file with the file extension .gpf is saved.

Importing favorites

You can read exported favorites into every Detailed Planning 3D subproject within a market.



1. Right-click in the Favorites window and select **Import** in the pop-up menu.
2. Open the folder in which the Favorites file is saved.
3. Highlight the file and click on **Open** to import the favorites into your subproject.
4. Confirm the information window with **OK**.
 - Favorites appear in a new Favorites folder in the Favorites window.

Deleting a favourite

You can delete objects and the Favorites folder.



1. Highlight an object or a Favorites folder in the Favorites window.
2. Right-click on a favorite and select **Delete** in the pop-up menu.



Default favorites are available depending on the market (sales company).

4.12.7 Object Properties

You can specify connection and installation parameters, such as connection height or article type for an object, as well as the ceramic appliance data.

Defining installation type and material group

1. Right-click on an object and select **Properties** in the pop-up menu.
2. In the **Configuration** field, select **Object**.
3. Specify the following properties. Proceed through the list of settings from top to bottom since every configuration setting influences the following setting.

Field	Description
Object type	Installation configuration: e. g. floor-standing WC or wall-hung WC, flush-mounted or exposed cistern etc.
Installation type	<ul style="list-style-type: none"> • Duofix • Kombifix • GIS • Sanbloc • Conventional <p>The installation types available depend on the installation wall system selected or whether the object is placed in front of a solid wall or a lightweight wall</p>
Material group	The selection depends on the installation type selected

4. If required, select **Optional articles**, e. g. an actuator plate for a WC.
 - The optional articles appear on the material list for **Sanitary objects & Final installation elements**.
5. Confirm your changes with **OK**.

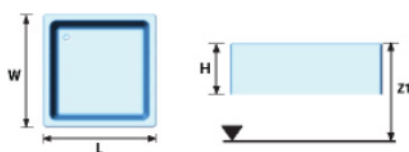


The installation type is automatically adjusted if, for example, a Duofix element is placed in front of a GIS installation wall. The wall therefore determines the installation type.

4.12.7.1 Specifying Ceramic Appliance Data

You can select individual ceramic appliance with standard dimensions from a system database. You also have the option of defining your own appliances by entering the manufacturer and dimensions.

1. Right-click on an object and select **Properties** in the pop-up menu.
2. In the **Configuration** field, select **Ceramic appliance**.
 - Images of the objects with dimensions and a table with standard models appears.
3. To select a standard mode, tick the checkbox for the model you require.
4. To use a user-defined mode, click on **Click to add a new ceramic appliance**.
5. Enter your data into the **Model**, **Manufacturer** and **Dimensions** fields.
The relevant figure will show you which dimensions you have to enter.



6. Click in the table at the end of the row to apply the data and activate the checkbox.
7. Click on **OK** to accept the ceramic appliance data for the object.

4.12.7.2 Defining Potable Water Properties

1. Right-click on an object and select **Properties** in the pop-up menu.
2. Select **Potable water** in the **Configuration** field.
3. Carry out the settings in the individual tabs.
4. Confirm with **OK**.

Potable water properties

The following settings are possible on the **General** tab.

Field	Remark
Connected media	Cold potable water (CPW), hot potable water (HPW) and/or non-potable water (NPW) can be checked or unchecked depending on the object.
Use type and simultaneity factor	The peak volumetric flow rate is calculated on the basis of this setting (according to country-specific norms). Selection between different types of building use (residential building, hotel, school, etc.) or user-defined (value between zero and one without a dimension). A higher value produces a high peak volumetric flow rate
Belongs to a unit	German market: If this checkbox is ticked, the object belongs to a unit. Several objects within an installation unit can be combined to form one unit. Pipe dimensions can thereby be optimised

Setting and Adapting Objects

Field	Remark
Unit	German market: The number of the unit can be set
Continuous consumption (> 15 min)	Switch to continuous volumetric flow rate with longer periods of consumption
PushFit: Preferred connection product range	Gunmetal or brass Swiss market: Angled tap connector boxes (60° or 90°)



The number of the unit is displayed in the hydraulic lists for improved clarity (German market).

The following settings are possible on the **Media-specific** tab.



Pressure units are market-dependent. The pressure unit hectopascal (hPa) is used for the German market in the following tables.

Field	Remark
Potable water connection height above FFL [m]	Defines the pipe height above the finished floor level. The value is defined in ProPlanner for each object and is based on the country's standards
Volumetric flow rate (V) in l/s	Volume of a pipe medium, depending on the consumer type in litres per second
Minimum flow pressure (p min fl) in hPa	Depends on the connected object
Consider volumetric flow rate in collector pipes	Checked or unchecked
Flow pressure (p fl) in hectopascals (hPa)	Calculated flow pressure
Static pressure (p st) in hectopascals (hPa)	Calculated static pressure

4.12.7.3 Defining Waste Water Properties

1. Right-click on an object and select **Properties** in the pop-up menu.
2. Select **Waste water** in the **Configuration** field.
3. Adapt the following properties if required:

Field	Remark
Discharge unit (DU) in l/s	Average value of the waste water discharge rate for a sanitary appliance
Connection diameter	Can be set at DN 10 – DN 300
Continuous discharge	Checked or unchecked

4. Confirm the changes with **OK**.

4.12.8 Positioning Pipe Connections

You can position the connectors for supply and discharge pipes at will:

1. Select an object in the Design Area window and open the pop-up menu.
2. Click on **Position of pipe connections**.
3. Select the type of pipe (HPW, CPW, NPW, Waste water etc.) in the **Connection** field.
4. Enter the coordinates for the connector: You can move the connector to the left or right, forwards or backwards and up or down.
5. Confirm with **OK**.

4.13 Auxiliary Lines

Auxiliary lines are used to align and place objects and walls. You can insert auxiliary lines into the drawing area (plan view) and into the front view vertically, horizontally and diagonally. Auxiliary lines can be freely inserted or they can start from objects and walls .

Drawing auxiliary lines manually

1. Right-click in the drawing area in the Design Area window and select **Draw auxiliary line** in the pop-up menu.
→ The shape of the cursor changes to a cross hair.
2. Click on the cross hair and drag it in one direction.



→ A green dot (starting point) is set. The auxiliary line appears as green dots.

3. Click again in the drawing area again to define an end point for the auxiliary line.



Drawing parallel auxiliary lines

1. Click on an auxiliary line in the drawing area.
→ The auxiliary line is highlighted in blue.
2. Right-click to open the pop-up menu and select **Draw parallel auxiliary lines**.
3. Select a distance in the **Configure distance** window and confirm with **OK**.
4. Set the line at the required position and press **Esc**.

Extending an auxiliary line

1. Click on an auxiliary line in the drawing area.
→ The auxiliary line is highlighted in blue.
2. Right-click to open the pop-up menu and select **Change length**.
→ The shape of the cursor changes to a cross hair.
3. Change the length of the line and click in the drawing area to set an end point.

Setting the starting point of the auxiliary lines as a reference point

1. Click on an auxiliary line in the drawing area.
→ The auxiliary line is highlighted in blue.
2. Right-click to open the pop-up menu and select **Set the starting point of the auxiliary line as a reference point**.
→ The system axis and its zero point are moved to the auxiliary line starting point. The **Assign reference point automatically** function is disabled.

Setting the starting point of the auxiliary line as a grid origin

Auxiliary lines can lie adjacent to the grid points on a grid with large spacings. You can place an auxiliary line precisely on a grid point using the **Set the starting point of the auxiliary line as a grid origin** function.

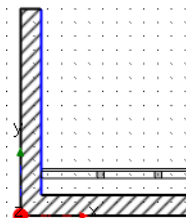
1. Click on an auxiliary line in the drawing area.
→ The auxiliary line is highlighted in blue.
2. Right-click to open the pop-up menu and select **Set the starting point of the auxiliary line as a grid origin**

Adding auxiliary lines parallel to objects

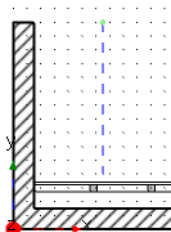
1. Click on an object in the drawing area.
→ The object is highlighted in blue.
2. Right-click to open the pop-up menu and select **Draw parallel auxiliary lines**.
3. Select a distance in the **Configure distance** window and confirm with **OK**.
4. Set the line at the required position and press **Esc**.

Drawing auxiliary lines parallel to solid walls

1. Click on the external or internal edge of a solid wall in the drawing area.
→ The edge of the wall is highlighted in blue.



2. Right-click to open the pop-up menu and select **Draw parallel auxiliary lines**.
3. Select a distance in the **Configure distance** window and confirm with **OK**.
4. Set the line at the required position and press **Esc**.







Drawing auxiliary lines parallel to installation walls

1. Click on an installation wall in the drawing area.
→ The installation wall is highlighted in blue.
2. Right-click to open the pop-up menu and select **Draw parallel auxiliary lines**.
3. Select a distance in the **Configure distance** window and confirm with **OK**.
4. Set the line at the required position and press **Esc**.

4.14 Inserting Text and Place Holders

The Detailed Planning 3D module provides tools for inserting text and drawing simple shapes. You can use the shapes, for example as place holders for structural details. You can specify precisely the size of the shapes. You can highlight, move, copy, insert and delete text and place holders, like all other objects in the Detailed Planning 3D ([see page 122](#)) and ([see page 124](#)) module.

Button	Command
	Insert free texts (plan view and front view)
	Insert line
	Insert circle
	Insert rectangle

Inserting text

1. Click on **Draw** in the **Detailed Planning 3D** and select **Text**.
2. Click on the position in the Drawing Area window where you wish to insert the text.
3. Write the text into the input field in the **Text properties** window.
4. Click on the relevant buttons to change the font size, text colour, background, border and text position.
5. Click on **OK**.
→ The text appears in the drawing area.



- Use the keyboard shortcut **Ctrl + C** or **Ctrl + V** to copy text to the clipboard and paste it into the input field in the **Text properties** window.
- Texts placed freely can be hidden and blocked using Layers ([see page 90](#)). Blocked text cannot be deleted.

Drawing circles or rectangles

You can draw a circle or a rectangle as follows:



1. Click on **Draw** in the **Detailed Planning 3D** menu and select **Ellipse**, for example.
2. Highlight a starting point by clicking into the Design Area window.
3. Move the cursor to drag open a circle.
4. Click again to complete the procedure.

Drawing lines

You have the option of drawing one or more lines.



1. Click on **Draw** in the **Detailed Planning 3D** and select **Line**.



2. Highlight a starting point by clicking into the Design Area window.
3. Use your mouse to drag the line in the direction required.
4. Click again to define the end point.
5. Repeat steps 3 and 4 if you wish to draw other lines.
6. Press **Esc** to exit the Drawing mode.

Drawing shapes with a fixed size

You can specify a size when drawing a shape (line, circle, rectangle).



1. Click on **Draw** in the **Detailed Planning 3D** menu and select **Ellipse**, for example.



2. Highlight a starting point by clicking into the Design Area window.
3. In the fast entry bar, select **Distance** to draw the circle with the specified size.
4. Press **Enter**.
 - The circle is drawn in the selected size.

Resizing

You have two options for changing the size of a shape:

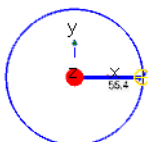
- Using the cursor
 - By specifying a section length
1. Right-click on the shape and select **Resize** in the pop-up menu.
 2. Hover your mouse over the shape until a double arrow appears.



3. Click on the shape and use the blue double arrow to drag the shape to the desired size.
4. Select one of the following options to change the size by inputting a section length:
 - Right-click on the shape and select **Obtain distance** in the pop-up menu.
 - Right-click on the shape and select **Properties**. Click on **Measure distance**.



5. To obtain or measure a distance, click on a starting point in the Design Area window and move the system axis.



6. Click again into the Design Area window to specify an end point.
 - The **Properties of background plan** window appears.
7. Enter the required length in the **New distance** field.
8. Confirm your entry with **OK**.
 - The size of the shape is adjusted to the new value.



- End points of lines are active as capture points. If the cursor is in drawing mode close to the end of a line, it automatically jumps to the capture point. You can draw, for example any polygon shape you wish
- You can cancel the drawing process using **Esc**

Changing properties of a shape

You can specify the following properties as well as the size:

- Line thickness (line, circle, rectangle)
 - Width (line)
 - Radius (circle)
 - Height and width (rectangle)
1. Right-click on a shape and select **Properties** in the pop-up menu.
 2. Enter the settings you wish in the **Dimensions** and **Visualisation** areas.
 3. Click on **OK** to apply the settings.

Rotating a shape



1. Right-click on a shape and select **Rotate background plan** in the pop-up menu.
2. Click on a point in the Design Area window around which you wish to rotate the shape.
3. Rotate the shape around the point to the position you require and then click again in the Design Area window.
4. In the fast entry bar, select **Angle** to rotate the shape by a selected angle.



4.15 Piping Systems

You have the option of planning piping systems in the Detailed Planning 3D module. You can draw the individual pipes in the plan view and in the front view.








The following buttons are available to you when drawing pipes:

	Cold potable water (CPW)
	Hot potable water (HPW)
	Waste water
	Ventilation pipes
	Continuous request for pipe properties The pipe position and slope of waste water pipes are automatically requested when drawing pipes
	Create infotexts for all pipes
	Remove all infotexts
	Move infotext

You will need the following objects for the planning of a piping system:

	Transfer point for hot and cold potable water
	Neutral transfer point for waste water

You can plan the following objects in a piping system:

	Shut-off valve
	Water meter
	Compact unit
	Instantaneous water heater
	Individual hot water tank
	Ventilation branch fitting
	Ventilation valve

4.15.1 Transfer Points

You require neutral transfer points for Potable water and Waste water to be able to draw pipes in Detailed Planning 3D. The properties of the transfer point correspond to the domestic water supply connection or, with waste water, to the underground pipe connection or sewage connection. The transfer point also represents the connection to a riser or stack.

Placing transfer points

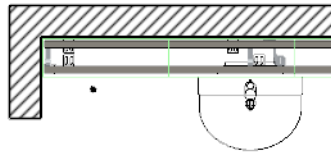
To retain the overview, place neutral transfer points for hot and cold potable water pipes. If you only set one transfer point, the pipes in the drawing lie on top of each other and are difficult to recognise.

1. Click on **Window** in the **View** menu and select **Tools**.
2. Select the **Objects** tab and click on a transfer point for Potable water or Waste water.
→ The selected transfer point is uploaded to the cursor.



Fig. 4-9 Potable water transfer point

3. Click in the Design Area window to place the transfer point.



4. Place other transfer points.

4.15.2 Drawing Pipes

You can draw pipes with or without an installation wall. You can draw pipes in the plan view or in the front view. Collisions between pipes are marked in red in the drawing area following the calculation and are displayed as errors in the message list.



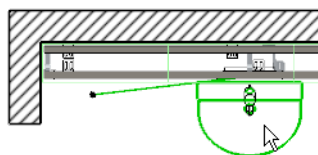
Discharge pipes and a Waste water prefabrication (Swiss market) cannot simultaneously be planned in a subproject.



1. Ensure that **Continuous request for pipe properties** is checked in the Detailed Planning 3D toolbar.



2. Click on one of the following buttons in the Detailed Planning 3D toolbar:
 - **Cold potable water (CPW)**
 - **Hot potable water (HPW)**
 - **Waste water**
 - **Ventilation pipe**
3. In the **Pipes** window, enter a **Pipe position** for Potable water and click on **OK**.
4. With Waste water and Ventilation, select the **Pipe position above UFFL** and the **Slope** in the **Pipe** window.
5. Click in the Design Area window (plan view) or in the front view on a transfer point or object and drag the pipe to the next object.
 - The object appears in the colour of the selected medium and the connection points are highlighted.



6. Click on the object.
 - The object is connected by a pipe to the transfer point or object.

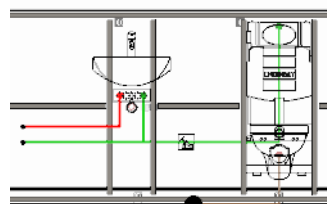


Fig. 4-10 Hot and cold potable water and waste water in the front view

7. Press **Esc** to exit the Drawing mode.



- Pipes are connected automatically if the end point of a pipe lies on an existing pipe.
- You can switch off Capture mode by pressing **Ctrl** to plan pipes underneath a sanitary object.

Drawing pipes with changes in direction



1. Ensure that **Continuous request for pipe properties** is checked in the Detailed Planning 3D toolbar.
2. Click on one of the following buttons in the Detailed Planning 3D toolbar:
 - **Cold potable water (CPW)**
 - **Hot potable water (HPW)**
 - **Waste water**
 - **Ventilation pipes**
3. In the **Pipe** window, enter a **Pipe position** for Potable water and click on **OK**.
4. With Waste water and Ventilation, select the **Pipe position** and the **Slope** in the **Pipe** window.
5. Click on a transfer point or an object and drag the pipe until you wish to make a change in direction.
6. Click in the Design Area window and, in the fast entry bar, select **Angle** to draw the pipe with the selected angle.
7. Drag the pipe to the next object and click on it.
 - The object is connected by a pipe to the transfer point or object.
8. Press **Esc** to exit the Drawing mode.

4.15.3 Inserting Fittings

Separate pipe

Use the **Split pipe** function to plan fittings at a precisely defined position in the pipe.

1. Highlight a pipe.
2. Right-click on the highlighted pipe and select **Split pipe** in the pop-up menu.
3. Select the length of the respective pipe section and confirm with **OK**.
 - The pipe is split into two pipes each either the selected length and the fitting is automatically placed.

Joining pipes

You can rejoin pipes that you have split to insert a fitting.

1. Hold down **Ctrl** to highlight the pipes you wish to join.
2. Right-click on the highlighted pipes and select **Join pipes** in the pop-up menu.
 - The pipes are joined and the fitting is automatically removed.

Deleting pipes

1. Highlight a pipe.
2. Press **Del**.

4.15.4 Pipe Properties

You can call up and change the properties of planned pipes. Only the length, changes in direction, pipe positions and slope are defined by the plan in waste water. These values cannot be changed.

Adjusting pipe properties

1. Highlight a pipe.
2. Right-click on the highlighted pipe and select **Properties** in the pop-up menu.
3. Uncheck the box and adjust the property you require.
4. Click on **OK** to apply the changes to the drawing.

Pipe properties options

You can adapt the following properties for potable water:

Field	Remark
Diameter	You can enter a fixed diameter here. Pipes with a fixed diameter are highlighted in yellow after the calculation
Existing pipe	A pipe with a fixed dimension can be marked as "existing". Existing pipes do not appear in the material list
Product range	The value was carried over from Building properties for the installation unit (Building > Building properties > Potable water > Material determination)
Fastening	Surface-mounted, concealed in the floor, duct or wall Embed into concrete floor (only in Swiss market)
Pipe type	The precise pipe type can be defined. This pipe type is no longer changed by an automatic calculation

You can adapt the following properties for waste water:

Field	Remark
Product range	Presetting using Waste water subproject settings
Nominal width (DN)	You can enter a fixed dimension here. Pipes with a fixed dimension are highlighted in yellow after the calculation
Access pipes [Pc]	Displayed in Schematic Planning. Appear in the material list
Fire protection sleeves [Pc]	Displayed in Schematic Planning. Appear in the material list
Wall/floor openings [Pc]	Displayed in Schematic Planning.

Field	Remark
PE ring seal sockets [Pc]	Not displayed in Schematic Planning. Appear in the material list
Sound insulation	Presetting using Waste water subproject settings
Fastening of horizontal pipes	Presetting using Waste water subproject settings
Fastening of vertical pipes	Presetting using Waste water subproject settings
Connection	The type of pipe connection is pre-set using the Waste water subproject settings

4.15.5 Stop Valves, Water Meters and Compact Units

When you place stop valves, water meters and compact units into pipes, ensure that you position the objects on the pre-set pipe positions.

Placing stop valves, water meters and compact units

1. Click on **Window** in the **View** menu and select **Tools**.
2. Select the **Objects** tab and click on **Stop valve**, **Water meter** or **Compact units**.
→ The selected object is uploaded to the cursor.
3. Click in the Design Area window to place the object.
4. Connect the object with an existing pipe ([see page 136](#)) and adjust the pipe position if necessary.

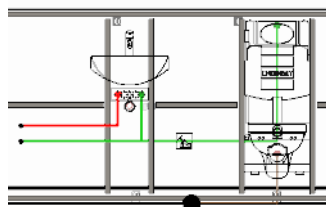


Fig. 4-11 Stop valve in the front view



- The installation height of the stop valve, water meter and compact units is automatically adjusted to the pipe position when pipes are joined in the plan view.
- The display of the stop valve, water meter and compact units in the Detailed Planning 3D module does not correspond to the actual position in the wall. This is a visual display. The objects are calculated hydraulically correctly and are laid correctly.

4.15.6 Ventilation Branch Fittings and Ventilation Valves

If non-ventilated discharge pipes are longer than 4 metres, a ventilation branch fitting or a ventilation valve must be set to ventilate the pipes.

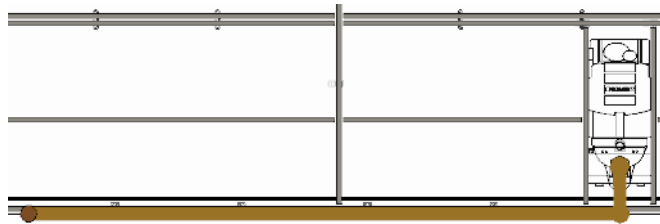
Setting ventilation branch fittings and ventilation valves

Requirements:

- A neutral transfer point for waste water has been set ([see page 135](#)).
- The transfer point is connected to one or several objects by means of a pipe ([see page 136](#)).



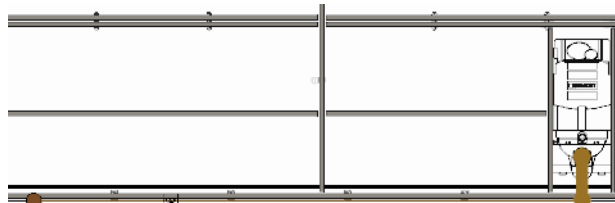
1. Calculate the subproject.



2. Select the **Waste water** tab in the message list.
→ If the pipe is longer than 4 metres, a corresponding error message appears in the Message list.
3. Delete the incorrect pipe in the Design Area window (plan view) or in the front view.
4. Select the **Ventilation branch fitting** in the Tools window in the **Objects** tab and place the branch fitting in the Design Area window (plan view) or in the front view.



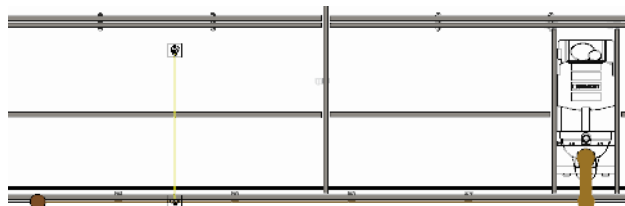
5. Click in the Detailed Planning 3D toolbar on **Waste water** and connect the transfer point to the ventilation branch fitting and one or more objects.



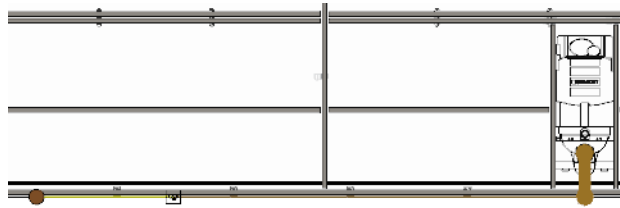
6. Select the **Ventilation valve** in the Tools window in the **Objects** tab and place the valve in the Design Area window (plan view) or in the front view.



7. Click in the Detailed Planning 3D toolbar on **Ventilation pipes** and connect the ventilation valve to the ventilation branch fitting.



8. You can also connect the ventilation branch fitting directly to the transfer point using a ventilation pipe.

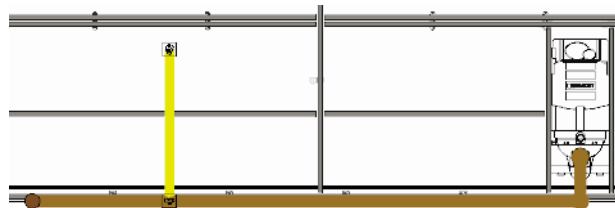


9. Adjust the pipe position if necessary.



10. Calculate the subproject.

- The error message on the pipe length disappears.
Another error message on the filling level can appear.



11. Enlarge the pipe diameter or increase the slope to adjust the maximum filling level .



- The installation height of the ventilation branch fitting and the ventilation valve is automatically adjusted to the pipe position when pipes are joined in the plan view.
- The visualisation of the ventilation branch fitting and the ventilation valve in the Detailed Planning 3D module does not correspond to the actual position in the wall. This is a visual visualisation. The objects are calculated hydraulically correctly and are installed correctly.

4.15.7 Infotexts

You can show infotexts for pipes. The infotexts contain the diameter and length of a pipe section. You can show infotexts in the plan view and front view and move them between the plan view and the front view.

Inserting infotexts in the plan view



- Click on **Create infotexts for all pipes** in the Detailed Planning 3D toolbar.
→ The infotexts appear in the Design Area window.

Inserting infotexts in the front view



Do not move the cursor over the Design Area window once you have opened the front view window and before clicking on the button to insert the infotexts. The Design Area window is then activated and the infotexts appear in the plan view.



1. Set a front view layer (see page 89) and open the front view window.



2. Click in the Detailed Planning 3D toolbar on **Generate infotexts for all pipes**, without previously moving the cursor over the Design Area window.
→ The infotexts appear in the front view.

Moving infotexts from the plan view into the front view

Requirements:

- Front view layer (see page 89) is set
- Infotexts are inserted in the plan view
- Front view window is open

1. Highlight an infotext in the plan view.



2. Click on **Move objects** in the **Detailed Planning 3D** menu.
3. Double-click on the highlighted infotext in the Design Area window.
4. Move the mouse into the front view.
- The infotext is automatically connected to the correct pipe section.
5. Click in the front view window to place the infotext.



Infotexts can be moved in the same way from the front view into the plan view.

Moving infotexts

You can move infotexts to make the plan clearer.

1. Highlight an infotext.



2. Click on **Move objects** in the **Detailed Planning 3D** menu.
Alternatively press **M**.
- Move points appear on the infotext.
3. Click on a move point.
4. Move the infotext to where you wish to have it in the Design Area window and click in the drawing area.

Moving several infotexts

Proceed as follows if you wish to move several or all infotexts:



1. Click on **Move infotexts** in the Detailed Planning 3D toolbar.
2. Click on an infotext and, holding down the mouse key, drag the text to the desired position.
3. Repeat step 2 for all other infotexts.

Deleting infotexts

1. Highlight one or more infotexts and press **Del**.



2. Click in the Detailed Planning 3D toolbar on **Remove all infotexts** to simultaneously delete all infotexts.


4.15.8 Calculation

ProPlanner calculates a hygienically optimum system for potable water. ProPlanner calculates all the necessary sizes, including the right transitions in pipes and bypasses for waste water. The calculated values are displayed in the Hydraulic list.

Calculating subprojects

► You have the following available options for calculating a subproject:

- Click on **Calculate subproject** in the **Edit** menu.

- Click on  in the toolbar.
- Press **F5**.

→ Information and errors are displayed in the message list following the calculation. You can display the affected object in the Design Area window by double-clicking on an error message.

Assigning pipes a defined diameter

In addition to automatic dimensioning, ProPlanner allows you to omit a pipe from the hydraulic calculation and assign it a defined diameter. You have to take into account variables, like flow pressure and flow velocity, for potable water. If the values entered are not within the range a note is generated.

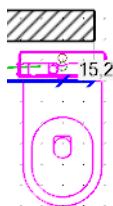
1. Double-click on the pipe to which you wish to assign a fixed diameter.
2. Select the required dimension for potable water in the **Diameter** field and in the **Nominal width (DN)** field for waste water.
3. Confirm the change with **OK**.
4. Calculate the subproject.
→ Information appears in the message list to show that this is a user-defined diameter.



Displaying and correcting errors

If a limit value is exceeded in your plan, an error message automatically appears in the message list. The message provides information about how to solve the problem.

1. Double-click on the error message in the Message list.
→ The incorrect object is highlighted in red and appears enlarged in the Design Area window.



2. Correct the error and calculate the subproject.
→ The error message is deleted in the message list.

4.15.9 Hydraulic Lists

The hydraulic lists provide an overview of individual flow paths and circulation circuits for potable water. They contain calculated values, such as flow rate, flow velocity and pressure loss.

Proceed as follows if the Hydraulic lists are not visible:

- ▶ Click on **Window** in the **View** menu and select **Potable water hydraulic list** or **Waste water hydraulic list**.

Identifying the flow path

The default settings of the flow paths for the total building are listed in the Hydraulic list. You can identify flow paths highlighted in the Hydraulic list in the Design Area window:

- ▶ Highlight a flow path in the Hydraulic list.
→ The flow path and the affected object appear bold.

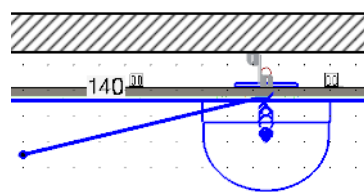


Fig. 4-12 Flow path for washbasin

Displaying flow paths for selected objects

You can call up the flow paths of individual objects in the Hydraulic list.

1. Select **Selected objects** in the right-hand field of the Hydraulic list.
2. Click on an object in the Design Area window.
→ The flow paths of the selected objects appear in the Hydraulic list.

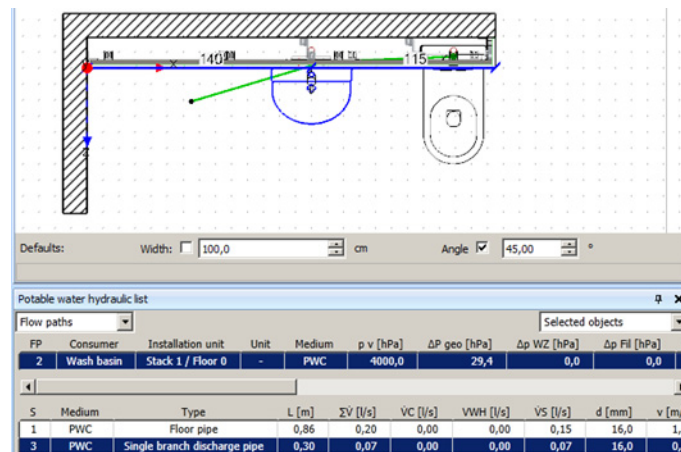


Fig. 4-13 Flow path for washbasin

4.15.9.1 Potable Water Hydraulic List

After a calculation, the Hydraulic list contains the following values:



Pressure units are market-dependent. The pressure unit hectopascal (hPa) is used for the German market in the following tables.

Flow paths

Column	Description
FW	Number of flow path
Consumer	Connected sanitary appliance
Installation unit	Consumer installation unit
Unit	Unit of the consumer (German market)
Medium	Potable water pipe medium at the consumer
p v [hPa]	Supply pressure
Δp geo [hPa]	Pressure loss through height difference
Δp WZ [hPa]	Pressure loss through water meter (German market)
Δp Fil [hPa]	Pressure loss through filter (German market)
Δp EH [hPa]	Pressure loss through softening plants (German market)
Δp TE [hPa]	Pressure loss through potable water heater (German market)
Δp AP [hPa]	Pressure loss through other appliances (German market)

Column	Description
$p_{\min FI}$ [hPa]	Minimum flow pressure
$\Sigma \Delta p$ [hPa]	Total pressure lost
Δp_{avail} [hPa]	Maximum permitted total pressure loss
L [m]	Length of flow path
Z [hPa]	Pressure loss from individual resistance in the flow path
$L \cdot R$ [hPa]	Pressure loss through pipe friction
$L \cdot R + Z$ [hPa]	Pressure loss from pipe friction and individual resistance
Flow pressure [hPa]	Flow pressure
Static pressure [hPa]	Static pressure
V_{nc} [l]	Non-circulating hot water volume (st)



You may have to scroll to the right to see all the values or to enlarge the window.

Circulation circuits

Column	Description
FW	Number of flow path
L_{HPW} [m]	Length of hot water sections
L_{CPW-C} [m]	Length of circulation sections
$\Sigma \Delta p$ [hPa]	Total pressure lost

Selected flow path

If a flow path / circulation circuit is highlighted, the following values are visible in the lower part of the Hydraulic list:

Column	Description
TS	Section number
Medium	Medium for section
Type	Pipe type
L [m]	Length of flow path
ΣV [l/s]	Total volumetric flow rate (Total flow rate)
V_D [l/s]	Volumetric flow rate of continuous consumers
V_{WH} [l/s]	Volumetric flow rate through wall hydrants
V_S [l/s]	Peak flow
d [mm]	Outside diameter
v_{\max} [m/s]	Maximum flow velocity

Column	Description
v [m/s]	Flow velocity
V [l]	Pipe volume
R [hPa/m]	Pipe friction pressure drop
$L \cdot R$ [hPa]	Pressure loss through pipe friction
Zeta value	Zeta value, loss coefficient
Z [hPa]	Pressure loss from individual resistance in the flow path
$L \cdot R + Z$ [hPa]	Pressure loss from pipe friction and individual resistance

Selected circulation circuit

Column	Description
TS	Section number
Medium	Medium for section
L [m]	Length of flow path
Q [W]	Heat loss of an insulated pipe
ΣQ [W]	Total heat loss of an insulated pipe
T [°C]	Temperature, calculated according to the temperature drop entered
$V \cdot S$ [l/h]	Peak flow
d [mm]	Outside diameter
v [m/s]	Flow velocity
V [l]	Pipe volume
R [hPa/m]	Pipe friction pressure drop
$L \cdot R$ [hPa]	Pressure loss through pipe friction
Zeta value	Zeta value, loss coefficient
Z [hPa]	Pressure loss from individual resistance
$L \cdot R + Z$ [hPa]	Pressure loss from pipe friction and individual resistance

4.15.9.2 Hydraulic List for Waste Water

Content of the Hydraulic list

After a calculation, the Hydraulics list contains the following values:

Column	Description
FW	Number of flow path
Waste water producer	Connected sanitary appliance

Column	Description
Installation unit	Installation unit in which the consumer is connected
Discharge unit [l/s]	Discharge unit of the respective object. This value is critical for dimensioning the pipes
Connection diameter	Diameter of the consumer connection
L [m]	Length of flow path
K	Discharge value for the frequency of use of sanitary appliances <ul style="list-style-type: none"> • User-defined (0.50 – 1.20) • Irregular (0.50) • Regular (0.70) • Frequent (1.00) • Intensive (1.20)

If a flow path is highlighted, the following values are visible in the lower part of the Hydraulic list:

Column	Description
TS	Section number
Type	Pipe type
DN	Nominal width (diameter)
di [mm]	Inside diameter
dV	Nominal width of indirect auxiliary ventilation
L [m]	Length of the section in metres
Σ DU [l/s]	Sum of discharge units of individual objects in litres per second. DU stands for Design Unit
Σ Sp [pc]	Number of kitchen sinks
DUmax [l/s]	Largest discharge unit in litres per second
K	Discharge value
Waste water discharge rate [l/s]	Waste water discharge rate in litres per second
Qc [l/s]	Waste water discharge rate from continuous consumers in litres per second (continuous discharge)
Qp [l/s]	Waste water discharge rate from faeces lifting system in litres per second (pump discharge volume)
Qtot [l/s]	Total waste water discharge rate in litres per second Total of Q_{ww} , Q_c and Q_p

Column	Description
Q_{\max} [l/s]	Maximum permissible waste water discharge rate of a pipe in litres per second. Q_{\max} has to at least correspond to the larger value of one of the following values: <ul style="list-style-type: none"> The calculated waste water discharge rate Q_{ww} or the total waste water discharge rate Q_{tot} or The waste water discharge rate of the sanitary appliance with the largest discharge unit
Jmin [%]	Smallest pipe gradient as a percentage
Filling level	Filling level
v [m/s]	Flow velocity in metres per second

4.16 Free Space Test

For your planning, you can activate the free space test (in Germany in accordance with VDI 6000-1). ProPlanner will then check, for example, that your plan observes minimum space requirements and minimum distances.

- ▶ Click on **Perform free space test** in the **Detailed Planning 3D** menu.
- Objects that do not comply with standards are shown in red.

The minimum space requirement of an object will be shown highlighted in red.

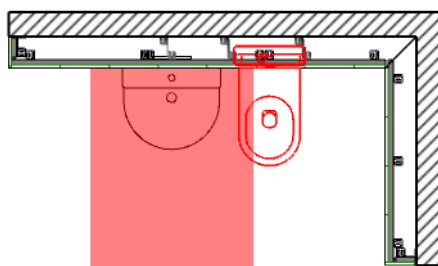


Fig. 4-14 Free space infringed

4.17 Dimensions

There are various options available in terms of dimensions:

- Construction dimensions ([see page 150](#))
- Fabrication dimensions ([see page 151](#)) (Front view and 3D view)
- Manual dimensions ([see page 151](#))

You can call up the different types of dimensions using the various tabs in the Dimensions window. Alternatively, you can add individual dimension lines manually and display them as user-defined.

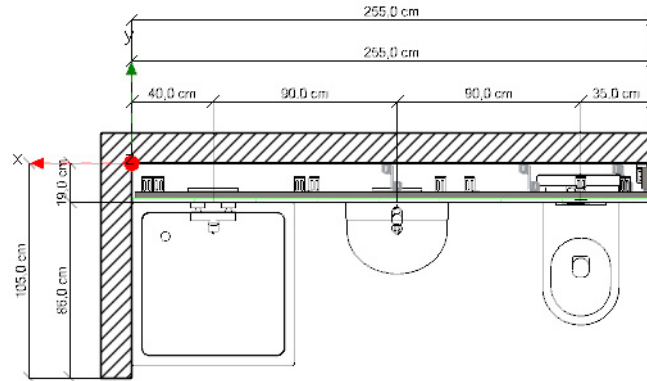


Fig. 4-15 Example of construction dimensions

4.17.1 Dimension Lines

You can enter presets for the visualisation of the dimension lines:

- Using the **Detailed Planning 3D > Subproject settings > Dimension lines** menu
- In the Dimensions window in the **Visualisation** area

The following must be entered for dimension lines to be displayed:

- A plan in the Design Area window
- The respective Layer ([see page 90](#)) must be selected
- The **Dimensions** window must be selected

Selecting presets



1. Click on **Window** in the **View** menu and select **Dimensions**.
2. Select a tab and enter the setting for **End mark style**, **Decimal places**, **Font size**, **End mark size** and **Colour**.
3. Check the boxes should you wish to display the units and auxiliary lines.

Changing all dimension lines

You can change the visualisation of dimension lines already inserted.



1. Click on **Window** in the **View** menu and select **Dimensions**.
2. Select a tab and change the settings in the **Visualisation** area.
3. Click on **For all**, to change the visualisation of all dimension lines.

Changing individual dimension lines

You can change the visualisation of individual dimension lines already inserted.



1. Click on **Window** in the **View** menu and select **Dimensions**.
2. Highlight the dimension lines, the visualisation of which you wish to change, in the Design Area window.
3. Select a tab and change the settings in the **Visualisation** area.
4. Click on **For selection**, to change the visualisation of the dimension lines selected.

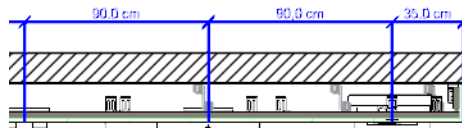


You can select dimension lines, such as objects and walls, several times ([see page 123](#)).

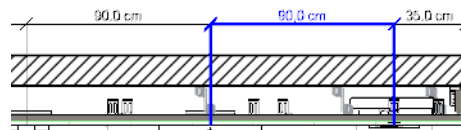
Dividing dimensional chains

Sections of measurements are always inserted into the drawing in a chain. You can divide these dimensional chains to edit individual sections of dimensions.

1. Highlight a dimensional chain in the Design Area window.



2. Right-click on the measurement chain and select **Divide dimensional chain**.
→ The dimensional chain is split into individual measurement sections.



Moving dimension lines

You can move dimension lines to make the visualisation of the dimension lines clearer.

1. Highlight one or more dimension lines that you wish to move.



2. Click on **Move objects** in the **Detailed Planning 3D** menu.
→ A capture point is enabled.
3. Click on the dimension lines and move them to the position you require.
4. Hold down **Ctrl** when moving the dimension lines to move them infinitely variably. By default, dimension lines automatically jump to adjacent dimension lines when they are moved.
5. Click on the end position in the Design Area window.
→ The dimension lines are moved.

Deleting dimension lines

1. Highlight one or more dimension lines in the Design Area window.
2. Press **Del**, to delete dimension lines..

4.17.2 Dimension Types

Select the Dimensions window to be able to enter dimensions.

Displaying the Dimensions window



- Click on **Window** in the **View** menu and select **Dimensions**.

Showing construction dimensions

1. Select the Dimensions window and select **Construction**.
2. Enter the settings for the **Visualisation**
3. Select or deselect the checkboxes in the **Automatic dimensions** area.



4. Click on **Enter dimensions automatically**.
→ The dimensions of the walls and objects appear in the plan view and front view. The dimensions of the objects heights and connection heights appear only in the front view.
5. Click on the buttons in the **Manual dimensions** area to add vertical or freely aligned dimensions for individual objects or walls.

Showing fabrication dimensions

Fabrication dimensions are used as the basis for installation. They therefore only appear in the front view and 3D view and not in the Design Area window. You can measure individual walls and objects in the **Front view** window.

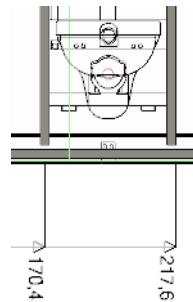
The fabrication dimensions are entered in the front view window in the following section. All the profiles are measured on their middle axis, beginning with the outer edge of the left-hand profile.

1. Select the Dimensions window and select **Fabrication**.
2. Enter the settings for the **Visualisation**.

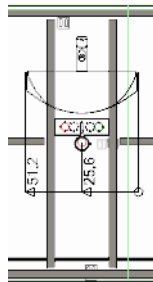


3. Click on **Enter dimensions automatically**.

→ Dimension lines for all planned profiles are displayed in the front view.



4. Click on the buttons in the **Manual dimensions** area to add vertical or freely aligned dimensions for individual objects or walls.



You can dimension screw heights and valve plate heights manually or automatically in the Front view.

Inserting dimensions manually

You can use manual dimensions to dimension individual objects or walls. You can perform manual Fabrication dimensions (see page 151) in the front view.

1. Select the Dimensions window and select **Other**.
2. Enter the settings for the **Visualisation**.
3. Click on the buttons in the **Manual dimensions** area to add vertical or freely aligned dimensions for individual objects or walls.
4. Move the cursor into the Design Area window.
 - The cursor appears as a cross hair and capture mode is active.

5. Click in sequence onto the capture points of the required object (wall or object) in the plan view or front view. Press **Ctrl** , to switch off Capture mode.
→ The construction dimensions for walls and objects are shown.

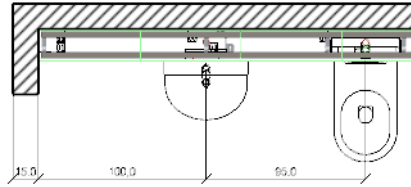


Fig. 4-16 Example of horizontal, manual construction dimensions.

6. Press **Esc** to exit Dimensions mode.



- Wall/floor openings (windows and doors) are automatically dimensioned and can be subsequently manually dimensioned.
- Vertical dimensions are measured from the unfinished floor level (UFFL).

Deleting dimensions

1. Select the Dimensions window and select **Construction**, **Fabrication** or **Other**.
2. Click on **Delete all dimensions** to hide all dimensions lines.



4.18 Importing and Exporting Data

There are a number of different options for importing or exporting data in the Detailed Planning 3D module:

- Importing installation walls from installation systems ([see page 152](#))
- Export CAD data (DXF/DWG) ([see page 153](#))
- Export TAI ([see page 161](#))
- Export Graphics ([see page 162](#))

Importing installation walls from installation systems



You can only import projects from installation systems if one or more relevant subprojects are open.

1. Click on **Import installation walls from installation systems** in the **Detailed Planning 3D** menu.
2. Select a subproject in the **Import from installation systems** window and click on **OK**.
→ The **subproject** and the associated **items** are shown in the Tools window.
3. Select the **Item** you require.
4. Click on the symbol for the installation wall and move the cursor into the Design Area window.
→ The installation wall appears in the Design Area window.
5. Click into the Design Area window once you have positioned the wall properly.
→ The installation wall has been added to the current plan.



The room height and floor construction are adapted, if necessary, when importing installation walls from installation systems. A window with the relevant message appears.

Exporting CAD data

You have the option of exporting your plan in the plan view and front view as a CAD graphic in DXF or DWG format in the Detailed Planning 3D module.

1. Click on **Export** in the **File** menu and then on **Graphic**.
2. Select the **View** (plan view or front view) that you wish to export.
3. Under **File type**, select the graphic format **DXF/DWG - AutoCAD**.
4. Click on **OK**.
5. Select a folder and enter a file name.
6. Click on **Save**.



The displayed position numbers in the front view are exported to a separate layer during the CAD export if the position numbers are checked under Layers ([see page 90](#)) for the front view.

4.19 Data Sheets

ProPlanner offers the opportunity of accessing various data sheets for planning Duofix or GIS System. The data sheets contain information on special applications and wall depths.

1. Click on **?** in the menu bar.
2. Select **Data sheets**.
 - A folder containing PDF documents opens. These PDFs can be displayed using **Acrobat Reader®** (contained on the DVD).

4.20 Printing Graphic

The Detailed Planning 3D module makes it possible to print the following views of a plan:

- Plan view
- Front view
- 3D view
- Building view

Printing a view

Requirements:

A plan is present in the Design Area Window.



1. Click on **Print graphic** in the **File** menu.
2. Select the required view in the **Selection** field in the **Print area**.
3. Select the print margin and **Print scale**.



- The values for the Print margin of X and Y refer to the top, left-hand page margin.
- The **Scale** corresponds to the default settings Drawing area ([see page 87](#))
- The **printable area** is located within the drawing frame

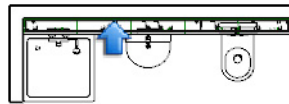
4. Click on **Preview** or **Print**.

Printing front views

You can choose different front views. Every front view is printed on one page.

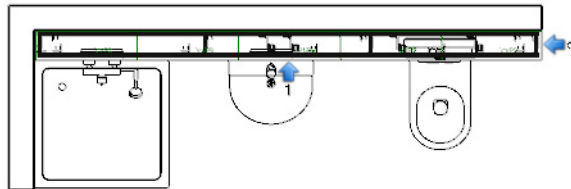


1. Click on **Print graphic** in the **File** menu.
2. Click on **Front views**.
→ The **Front view selection** window appears.
3. Hover your mouse over the View window.



A blue arrow appears if a front view can be set.



4. Click in the **Front view selection**, if you wish to carry over the front view.
→ The front view appears in the **Front views to be printed** list. The front view is labelled with a small blue arrow and number in the view. The number corresponds to the list number.
5. Repeat the previous step until all the required front views have been applied.



6. Click on **OK** to confirm your selection.
7. Click on **Preview** or **Print**.

5 Graphics and Lists

Use ProPlanner to print material lists, drawings and much more. There are two buttons on the toolbar available for this

Button	Function
	Print lists for calculated subprojects
	Print the current drawing

The following lists can be printed:

Type of list	Description	Module
Project cover sheet	Project data and subprojects are listed	<ul style="list-style-type: none"> Cover sheets
Subproject cover sheet	A cover sheet with the project data can be printed for each subproject	<ul style="list-style-type: none"> Cover sheets
Cover sheet	Summarises the basic information for the respective lists.	<ul style="list-style-type: none"> Potable water Waste water Heating Roof Drainage System
Cover sheet (building input)	Summarises the information for building input	<ul style="list-style-type: none"> Potable water
Graphics print	Drawing is printed	<ul style="list-style-type: none"> Roof Drainage System
Material list	Contains quantities, article numbers and article descriptions	<ul style="list-style-type: none"> Sanitary objects & final installation elements Potable water Waste water Heating Roof Drainage System Installation Systems Detailed Planning 3D Waste Water Prefabrication

Type of list	Description	Module
Quotation	Contains articles, installation times and prices	<ul style="list-style-type: none"> • Sanitary objects & final installation elements • Potable water • Waste water • Heating • Roof Drainage System • Installation Systems • Detailed Planning 3D • Waste Water Prefabrication
Flow path overview	Contains data on the length and pressure of the individual flow paths	<ul style="list-style-type: none"> • Potable water
Hydraulic List	Visualisation of all the values required for the hydraulics calculation. The hydraulic list contains data on flow rate, flow velocity, pressure loss etc.	<ul style="list-style-type: none"> • Potable water • Waste water • Heating • Roof Drainage System
Bill of material	Contains quantities, article numbers and descriptions of the individual objects, fittings and pipes	<ul style="list-style-type: none"> • Sanitary objects & final installation elements • Waste water
Installation manual	Contains an installation plan with construction dimension and the materials required	<ul style="list-style-type: none"> • Installation Systems • Detailed Planning 3D
Fastenings	Contains fastening material, like anchor points and sliding brackets	<ul style="list-style-type: none"> • Roof Drainage System
Lateral supports		<ul style="list-style-type: none"> • Roof Drainage System
Cut list	Contains quantities, article numbers and descriptions of the individual pipes and fittings	<ul style="list-style-type: none"> • Waste Water Prefabrication



The given modules and list types are unavailable in all markets.

5.1 Printing Graphics

You can print the drawing in the Design Area window as a graphic. The graphic is printed with a title block and legend.

You can print the building as a graphic in the Detailed Planning 3D and Piping Systems modules. Other functions are available in the Detailed Planning 3D and Roof Drainage System modules.



If you print the Design Area window, the installation unit selected in the Building window is printed in the Detailed Planning 3D and Piping Systems modules. The item in the building appears in the title block.




1. Click on **Print graphic** in the **File** menu.
2. Define the **Printer/plotter** the **Paper format** and the Page alignment in the **Print/plot graphic** window.
3. Click on **Printer settings**, to enter other settings for the printer.
4. Select the settings you require for the respective module in the **Print area**.
5. Select the print margin from the upper (X), left (Y) page margin.
6. Specify the **Print scale**.
7. Click on **Preview** to check the settings.
8. Close the preview and click on **Print**.

5.2 Printing Lists

You can define for which subprojects you wish to print which lists and specify additional charges for quotations. Proceed in stages as follows in the **Print lists** dialog window.

Selecting subprojects

You can select for which subprojects, installation units and modules lists are to be printed in the **Source data** area. You can make the selection using either the drop-down menu or the magnifying glass .



1. Click on **Print lists** in the **File** menu.
2. Select the subprojects, installation units and modules you require under **Source data**.

Selecting lists

You can compile lists for selected subprojects to prepare a quotation for example. There are different list types available, like material lists and bills of material. Use list settings to define what materials are to be taken into consideration and on which additional charges the calculation is based.

Specifying settings for lists

Additional charges, sort sequence and time data can be set once and saved for every list ([see page 158](#)).

1. Click on **Settings for all lists**.



2. Enter the settings for **Grouping**, **Additional charges**, **Display** and **General**.
3. Confirm the settings with **OK**.

Selecting list types

You can select different list types to compile a list.

1. Open the range of list types in the **Lists** area.
2. Check or uncheck the checkboxes to select list types.

Specifying settings for list types

You can define material groups, enter list type-specific settings and comments for certain list types, like material lists and bills of materials.

1. Click on **Settings for this list**.
2. Check or uncheck the checkboxes to select **Material groups**.
3. Click on **List type-specific**, to enter other settings and insert comments.
4. Confirm the settings with **OK**.

Saving settings

You can save all settings and use them for further print runs.

1. Click on **Save current settings as a template**.



2. Enter a list name in the **Save current settings as a template** window.
3. Check the **Save as default** checkbox to apply the settings as default settings to other lists.
4. Confirm the settings with **OK**.



You can zoom into the preview of the lists using the slide rule at the bottom right of the display to obtain a more convenient view of the selected lists.

Starting list printing

When you print lists, all subprojects are automatically recalculated in advance.

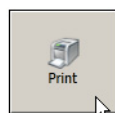


If errors occur when calculating subprojects, warnings and error messages are displayed in the affected lists. With warnings, the data is taken into consideration as far as possible for the print. Error messages result in cancellation. No lists are printed when calculation errors occur in the Detailed Planning 3D, Waste Water Prefabrication and Roof Drainage System modules.

1. Select a printer in the **Output** area.
2. Select **Excel export** or **CSV export** to save the list as an Excel file or CSV file.
3. Select which pages you wish to print.



4. Click on **Printer settings**, to enter other settings for the printer.
5. Click on **Print** to start the print process.



The settings are retained after printing or after closing the print dialog box and are only reset when you close ProPlanner.

6 Adding Additional Articles to Lists

You can add any additional articles (material) you require in the individual modules of your subprojects. The articles are then taken into consideration when you Print lists ([see page 157](#)).

The following possibilities are provided:

- Adding articles from the Geberit product range
- Entering user-defined articles
- Add articles from an XML file
- Change entered material

Adding articles from the Geberit product range

1. Click on **Add article** in the **File** menu.
→ The articles from the Geberit product range are listed in the **Add articles** window in the **Article selection** area.
2. Select the subproject for which you wish to add articles in the **Subproject** field.
3. Select the settings for the **Installation unit** and the **Module**.
4. If necessary select an **Installation unit** or globally all units (**General**) for which you require additional articles.
5. Highlight the desired article in the list and enter the required number in the **Quantity** field.
6. Enter an **Article number** and/or a **Description** to simplify the search for an article.
7. Click on **Add**.
→ The articles appear in the **Selected articles** list.
8. Repeat steps 2 – 6, until you have added all of the articles you require.
9. Click on **OK** to save the list and close the window.



In order to enter minus material, you can also enter negative values in the **Quantity** field. Negative quantities are automatically deducted from the Article list, if available.



Articles from the Geberit product range appear with article information with views, dimensions, installation manuals in PDF format and a ZIP file with a CAD drawing in DWG or DXF format and a link to the Geberit product catalogue.

Entering user-defined articles

If necessary, you can define yourself articles that are not available in the product range and save in an XML format. You can upload the XML file later and add the articles to any project you wish.

1. Click on **Program settings** in the **File** menu and select **User-defined articles**.
2. Enter the required information, such as **Article number**, **Description**, **Quantity unit (ME)**, **Price** and **Installation time** into the list.
3. Click on **Save**.
4. Enter a **File name** and click on **Save**.
→ The file is saved in an XML format.
5. Click on **Load**, to call up a saved list.
6. Click on **OK** to close the window.

Adding articles from an XML file

Requirements:

There is already an XML file with articles/materials to be added.

1. Click on **Add article** in the **File** menu.

2. Select **User-defined** in the upper left field in the **Add articles** window.
3. Click on **Load**
4. Select the XML file containing the articles you require and click on **Open**.
→ The articles from this file are listed in the **Article selection** area.
5. Continue as described in Adding material from the Geberit product range ([see page 159](#)) (step 2 onwards).

Changing selected articles

You can subsequently change the assignment of selected articles to subprojects, installation units or modules.

1. Click on **Add article** in the **File** menu.
2. To change entered articles, highlight the articles in the **Selected articles** list in the **Add articles** window. Make the changes in the **Quantity**, **Subproject**, **Module** and/or **Installation unit** fields.
3. Click on **Change**.
4. To delete entered articles from the list, highlight the articles and click on **Delete**.
5. Click on **OK** to save the list and close the window.

7 Exporting Data

You can export the following data from ProPlanner 2013:

Data	Interface/Target format
Lists	<ul style="list-style-type: none"> Table (xls or xlsx) Text in table format (csv) Refer also to Print lists (see page 157).
Project data and calculated values	<ul style="list-style-type: none"> UGL with type of enquiry GAEB 1990 or 2000 XML (d81/d83) DataExpert It is possible to accept the data in your bid preparation program using these data formats. The available file formats can vary according to the country
Drawings and graphics	<ul style="list-style-type: none"> DXF/DWG (Roof Drainage System, Schematic Planning, Installation Systems, Detailed Planning 3D and Waste water prefabrication modules). BMP GIF JPEG PNG TIFF

7.1 Exporting Project Data

You can read and accept project data and calculated values in your bid preparation program.

1. Click on **Export** in the **File** menu and then on **AVA**.
2. In the **Content** area, select whether the export is to be carried out for the **current subproject** or for the **total project**.
3. Select a **Data format**: UGL, GAEB, DataExpert etc. and enter the relevant settings. The following enquiry types are available for **UGL**:
 - AB: For order confirmations from wholesalers to tradesmen
 - AN: For enquiries from tradesman to wholesalers
 - BE: For tradesmen's orders to wholesalers
 - PA: For price quotations from wholesalers to tradesmen
 - TB: For tradesmen's call-off orders from wholesalers



The data formats and setting options offered depend on the market set in the Program settings ([see page 11](#)).

4. Select a directory and enter a file name in the **Storage location**.
5. Click on **Export**.

7.2 Exporting Graphics

1. Click on **Export** in the **File** menu and then on **Graphic**.
2. Should you wish to export a graphic from the Piping Systems module, you can select between Module and Building in the **View** field. You can select the planning view (plan view, front view or 3D view) or the Building in the Detailed Planning 3D module.
3. Select the desired graphic format in the **File type** field.
4. If necessary, enter the width and height of the graphic in the **Export settings** area.
5. Click on **OK**.
6. Select a folder and enter a file name.
7. Click on **Save**.



In the Installation Systems module, the graphic has to be exported from the preview in the **Fast entry** window.

8 Keyboard Shortcuts

You can use keyboard shortcuts to work faster with ProPlanner. You can select from general keyboard shortcuts and combinations that apply to the specific module. The term "keyboard shortcut" denotes both individual keys as well as combinations of two or more keys. Press all keys simultaneously if you are using a combination comprising several keys. If you are using a letter key, you do not need to press the **Shift** key simultaneously.

Country-specific keyboard shortcuts are not listed here and can be requested from the respective sales company's hotline.

8.1 General



The same keyboard shortcuts may have a different effect in the various modules.

Keyboard shortcut	Description
Ctrl + C	Copy: Copy highlighted objects to the clipboard
Ctrl + A	Select all
Hold down Ctrl + LEFT MOUSE KEY	Highlight several objects
Ctrl + X	Cut: Remove highlighted objects and paste to clipboard
Ctrl + V	Paste: Paste objects from the clipboard
DEL	Delete highlighted objects
Esc	Cancel
F5	Calculate
Ctrl + F5	Calculate all
F1	Call up the help function
Ctrl + N	Open new subproject
Ctrl + O	Open existing subproject
Ctrl + S	Save
Ctrl + P	Print lists
Ctrl + G	Print graphics
Ctrl + Z	Undo previous action
Ctrl + Y	Redo
+/- (on the numerical keypad)	Zoom +/-

Keyboard shortcut	Description
Item no.1	Set screen to initial position
Pressed MOUSE WHEEL	Move drawing area
Rotate MOUSE WHEEL	Zoom in, zoom out

Example

You have created and calculated a project. Do you want to save the project? In the **File** menu, the keyboard shortcut for the **Save** command is given by Ctrl+S.

- ▶ Press **Ctrl + S**.
 - Saving the project. You will be asked to give the file a name when you save the project for the first time.

8.2 Building Window

Shortcut	Prerequisite	Description
Ctrl + C	Section is highlighted.	Copy section contents (except for the attic floor and underground floor contents).
Ctrl + V	The section contents have been copied to the clipboard. New section is highlighted.	Paste the section contents from the clipboard to the new section (except for the attic floor and underground floor contents).
Ctrl + V	The section contents have been copied to the clipboard. The wall between the sections is highlighted.	Add a new section with the previously copied section contents (except for the attic floor and underground floor contents)
Ctrl + C	Floor is highlighted.	Copy floor contents from highlighted floor
Ctrl + V	Floor contents have been copied to the clipboard. New floor is highlighted.	Paste the previously copied floor contents into the new floor
Ctrl + V	Floor contents have been copied to the clipboard. Ceiling between the floors is highlighted.	Paste new floor and previously copied floor contents.

8.3 Roof Drainage System



Keyboard shortcut	Prerequisite	Description
Hold down Ctrl + LEFT MOUSE KEY		Highlighting several objects
Ctrl + A		Select all
Ctrl + C		Copy: Copy highlighted objects (outlets, pipes or free text) to the clipboard
Ctrl + X		Cut: Remove highlighted objects and paste to clipboard
Ctrl + V		Paste: Paste objects from the clipboard
Del		Delete highlighted objects
Esc		Switch to Select mode
F5		Calculate
Ctrl + F5		Calculate all
1	Draw pipe mode is active.	Select XY drawing layer
2	Draw pipe mode is active.	Select XZ drawing layer
3	Draw pipe mode is active.	Select YZ drawing layer
4	Draw pipe mode is active.	Select 1:2 or 2:1 ratio
+		Zoom in
-		Zoom out
Space bar		Deselect object
Arrow keys		Move highlighted object
Pos. 1		Zoom to 100 %
Pressed MOUSE WHEEL		Move drawing area
Rotate MOUSE WHEEL		Zoom in, zoom out

Additional keyboard shortcuts for inserting roof outlets, underground pipe connections, pipes, etc. are country-specific and can be obtained from the respective sales company.

Keyboard shortcut	Description
E	Set roof outlet
G	Set underground pipe connection
R	Draw pipe
A	Insert branch fitting
P	Insert cleaning opening

Keyboard shortcut	Description
L	Insert expansion socket
T	Split pipe
Z	Join pipes
T	Insert texts

8.4 Installation Systems

Keyboard shortcut	Description
P	New position number
S	Fast Entry window
W	New installation wall
E	Add article
O	New object
F2	Rename position number
DEL	Delete position number
Keyboard shortcuts in Installation wall, Object and Article tabs	
DEL	Delete object
SPACE BAR	Add object
Preview keyboard shortcuts	
 Selection mode:	
Arrow keys	Move highlighted object centimetre by centimetre
Ctrl + arrow keys	Move highlighted object millimetre by millimetre
 Navigation mode:	
Arrow keys	Move drawing area
Pressed MOUSE WHEEL	Move drawing area
Rotate MOUSE WHEEL	Zoom in, zoom out

9 Error Messages

The following sections describe how to react to the most important error messages and warnings and on which standards and regulations they are based.

If you double-click on an error message or warning in the message list of ProPlanner, the error will be highlighted and displayed in the Design Area window.

The error messages are based on German standards and regulations. Depending on the market set in ProPlanner, the error messages can vary or appear in another context.

Standards and regulations

Standard, regulation	Title	Issued
SN 592000	Planning and production of systems for the drainage of property	2002
DIN 1986-100	Drainage plants for buildings and premises - Part 100: Additional ordinances for EN 752 and EN 12056	2008-05
DIN EN 12056-2, -3, -4	Gravity drainage plants in buildings	2001
Potable water guidelines W3	Guidelines for potable water systems; SVGW Codes of Practice	2013
DIN EN 806-3	Codes of Practice for Drinking Water Installations – Part 3: Calculation of the Internal Diameter of Pipes – Simplified Method	2006
DIN 1988 – 200	Codes of Practice for Drinking Water Installations – Part 200: Installation type A (closed system) – Design, components, sanitary appliances, product materials; DVGW German Technical and Scientific Association for Gas and Water Codes of Practice	2012
DIN 1988 – 300	National Supplementary Standard Codes of Practice for Drinking Water Installations – Part 300: Calculation of the Pipe Diameter, DVGW German Technical and Scientific Association for Gas and Water Codes of Practice	2012
DIN 1988 – 600	Codes of Practice for Drinking Water Installations – Part 600: Potable water systems in conjunction with fire extinguishing systems and for protection systems; DVGW German Technical and Scientific Association for Gas and Water Codes of Practice	2012
DVGW W 553	Dimensioning of circulation systems in central potable water heating installations	2002
DIN 1986-100	Roof drainage with siphonic system	2008-05

9.1 Error Messages Roof Drainage System

Module Roof Drainage System

Error message	Cause	Remedy
Object is not fully connected.	An object has not been connected correctly.	Check all the connections or use the Delete unconnected objects (see page 51) function.
The volumetric flow rate at the ground pipe connection is insufficient.	The required starting flow, i.e. the height difference between the outlet and the underground pipe connection, is insufficient. The volumetric flow rate at the outlet cannot be discharged via the pipe network.	Check the entered heights of the vertical pipes and adjust them, if necessary. Increase or reduce the pipe dimensions. Use the Optimise dimensioning (see page 53) function.
The flow rate achieved at the outlet is insufficient.	The dimensioned pipework cannot drain the volumetric flow rate specified for the outlet through the pipe network.	Check the entered heights of the vertical pipes and adjust them, if necessary. Increase or reduce the pipe dimensions. Use the Optimise dimensioning (see page 53) function.
The internal pipe pressure is too high.	Too high a (permissible) internal pressure in the pipe.	<ul style="list-style-type: none"> Check the heights of the vertical pipes entered and adjust them, if necessary Check whether the corresponding pipes are reinforced. The Reinforcement function is available in the Properties of the pipe for this purpose Increase the pipe dimensions Use the Optimise dimensioning (see page 53) function.
The minimum flow velocity is not achieved.	Too low a height difference or too large pipe dimensions in the system.	<ul style="list-style-type: none"> Reduce the pipe dimensions. Check the heights and lengths of the vertical pipes entered and adjust them, if necessary. Use the Optimise dimensioning (see page 53) function.
Reduction of 3 or more dimensions found in flow direction.	Too many reducers (changes of dimension) in the downpipe.	<ul style="list-style-type: none"> Check the heights and lengths of the vertical pipes entered and adjust them, if necessary or plan several drop zones Possibly sub-divide the pipes into several sections (see page 45) Use the Optimise dimensioning (see page 53) function.

Error Messages Roof Drainage System

Error message	Cause	Remedy
The PSI value is too low (market-dependent).	Too large a proportion of air in the pipe.	<ul style="list-style-type: none"> • Check the heights and lengths of the vertical pipes entered • Check the volumetric flow rate at the outlets • Use the Optimise dimensioning (see page 53) function.
Normal outlets combined with emergency overflows planned.	Normal roof outlets and emergency overflows are connected to an underground pipe connection.	Connect the emergency overflows separately from the normal roof outlets with a separate underground pipe connection.
The height differential between 2 roof outlets is greater than 1 metre.	Two roof outlets, the height difference of which is greater than a metre, end in the same underground pipe connection.	Adjust the pipe lengths so that the height difference of both roof outlets is at most one metre.

10 Technical Requirements

The following technical requirements apply to the version ProPlanner 2013:

	Minimum	Recommended
Operating system	Windows XP (32 bit) SP3 Windows Vista (32/64 bit)	Windows 7 (32/64 bit)
Processor	Intel Pentium 4 or AMD Athlon 64, 1.8 GHz	multi-core and > 2 GHz
RAM	Windows XP: 1 GB RAM Windows Vista/Windows 7: 32 bit, 2 GB RAM 64 bit, 3 GB RAM	32 bit, 3 GB RAM 64 bit, 4 GB RAM
Hard disk space	3 GB free	6 GB free
Graphics card	64 MB, DirectX 9	256 MB, DirectX 9
Screen	1280 pixel horizontal resolution / 900 pixel vertical resolution 96 dpi (screen size) recommended	1400 pixel horizontal resolution / 1024 pixel vertical resolution 96 dpi (screen size) recommended
Installation	DVD drive or internet connection	
Online services	Internet access needed for automatic program updates (port 80 open)	
System components	System components needed (supplied with the program and automatically installed): <ul style="list-style-type: none"> • Microsoft.NET Framework 3.5 and 4.0 • Microsoft DirectX 9 	

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